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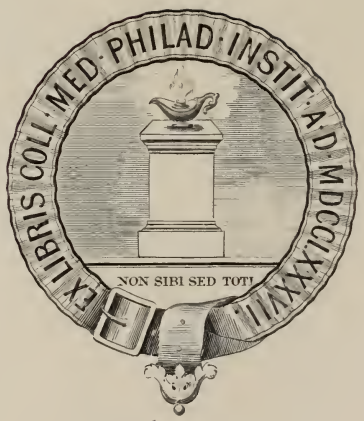
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THE CHICAGO

MEDICAL EXAMINER,

A MONTHLY JOURNAL, DEVOTED TO THE

EDUCATIONAL, SCIENTIFIC AND PRACTICAL INTERESTS

OF THE

MEDICAL PROFESSION.

EDITED BY

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THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., EDITOR.

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Original Contributions.

ARTICLE I.

THE ORGANS OF SENSATION AND MOTION DISCOVERED.

BY W. BYRD POWELL, M.D., of Covington, Ky.

MR EDITOR:—Believing that the discovery of the organs of sensation and motion, or the sensory and motory centres, will be interesting, if not useful, to the profession, I send for the EXAMINER a contribution on these subjects. Physiologists have long, if not always, spoken of the sensory and motory centres; but hitherto they have known nothing of their respective organs. Physiologists have conclusively arrived at the conviction that the faculties of sensation and motion are independent of each other. But are they primitive and independent faculties? I do not remember to have found this question answered—it has only, I believe, been assumed. I will now show that the affirmative is true. Dr. SPURZHIEM, high authority, presents it as a rule, that when a faculty is more strongly manifested by one sex than the other, or by one people or nation than another, it is primitive and independent. Men are more sensual, generally, than women. Men complain more than women under an exposure to cold, and under the inflictions of the surgeon's knife, than women do. The white variety, at least, of the Caucasian species of our genus is greatly more capable of suffering than is the American species; our Indians bear torture

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with comparative impunity. From these facts, I infer that animal sensibility is a primitive and independent faculty.

Muscular motion. As the males of all known species of animals are more muscular than the females, so I infer that this faculty is both primitive and independent.

Of the functions of the cerebellum nothing, I believe, was definitely known before the investigations of Dr. GALL. He discovered it to be the source of the "instinct of reproduction;" but this opinion has been ably but unsuccessfully controverted. Since the demise of this distinguished observer and physiologist, some French physiologists, for the purpose of disproving Dr. GALL'S conclusion in relation to the function of the cerebellum, obtained the cerebelli of stallions, geldings, and mares and weighed them. They found those of some mares and geldings to weigh more than those of some stallions. Dr. GALL did not teach that the "instinct of reproduction" was the exclusive function of the cerebellum, nor did he teach the contrary. He taught that animals having a large and broad cerebellum were the most successful procreators; but he never comprehended why it was so. He thus left the impression that the entire cerebellum was the organ of the "instinct of reproduction." But this conclusion does not necessarily follow; because other faculties may be essential to reproduction than the instinct of reproduction. The existence of the organs of other faculties in the cerebellum may explain the fact that some mares and geldings may have a larger cerebellum than some stallions; the sequel will show. These physiologists, if I mistake not, entertained the opinion that the coördination and regulation of muscular movements constituted the function of the cerebellum, a most preposterous opinion, certainly; in as much as these functions are purely intellectual. Is there any common sense in the idea that the muscular movements of the pianist, violinist, and engraver are the results of a blind instinct? Some other French physiologists taught that the cerebellum was the organ of sensation. The sequel will show that the cerebellum comprises the organs of sensation, motion, and the "instinct of reproduction."

As my observations in relation to sensation and motion were conducted *pari passu*, I find it more convenient to treat of them together. As the history of these discoveries is interesting, and shows how they were suggested, I will introduce it.

In 1837, during the vacation of the Medical College of Louisiana, New Orleans, I visited, as a phrenological teacher, the City of Claiborne, Ala., and in an hour or so after my arrival, Dr. JOHNSON, with four other gentlemen, called on me. The Dr. had with him a human skull, and as he approached me, he said, "Prof. Powell, I will bet you ten dollars you cannot indicate the character of the man representod by this skull, by an examination of it." As he was to me a stranger, and not being pleased with his introduction, I resolved to parry him. I rejoined, as I know I can, and you do not know that I can, the chances are all in my favor; and, therefore, Sir, I cannot, as an honest man, accept your proposition. He rejoined, "But I am willing to risk it." I rejoined, I think it very probable that you know but little of the science of phrenology, and still less of my ability in the application of it; therefore, your willingness to risk, under such circumstances, affords me no relief; consequently, I must decline the acceptance of your proposition.

At this moment, one of the other gentlemen said, "Professor, you will greatly oblige us by indicating the character of the man of whom that is the skull?" I responded, I will, Sir, if Dr. JOHNSON will make a memorandum of the leading peculiarities of his character, and the principal events of his history. The Dr. rejoined, "I will do it, Sir." He did it; and at my request he gave it to the gentleman who made the request that I should give my opinion of the man, to keep till I should have expressed my opinion. I took the skull and remarked thus:—The man represented by this skull was tall and slender; his hair and eyes were brown; his complexion dark, or in other words, his temperament was bilious encephalic. (The Dr. ejaculated, "I did not mention that in the memorandum; but, Sir, you are graphically correct.") In relation to his character, I have to say, that a more degraded specimen of our species can

scarcely be found in any civilized community than he must have been, for he observed none of the proprieties incidental to civil society. He was very cowardly; and equally negligent of all the duties incidental to humanity, in the social state; and yet he was respectably endowed with mechanical and mathematical abilities; but he was so irresponsible, and destitute of industrial energy, that they could have been of but little use to himself or any one else; but the governing proclivity of his nature was his sexual propensity, and it was so exceedingly importunate that I cannot believe that he was capable of restraining it within legal limits. I now said, I have concluded, gentlemen. The Dr. rejoined, "If you had accepted my proposition, I would now be minus ten dollars."

The memorandum was now handed to me, and it read thus: —"The man represented by the skull in question was known as Thomas Kennedy, a native of Annapolis, Md.; he was by trade a house carpenter, and esteemed a good one; he was also a practical surveyor; but he was so unreliable and worthless that he was but rarely employed to do anything; he was so cowardly that the boys bullied over him in the streets. At the age of 14 years, he attempted the violation of a girl 7 years old; at the age of 18 years, he attempted a similar outrage upon a girl 9 years old; at the age of 20 years, he married, and a day or so after, his wife arrested him in attempting a similar outrage upon her black maidservant, 8 years old; at the age of 24 years, his wife died, and he went to Virginia, and perpetrated a rape on a girl 10 years old; and for this crime he was hung —while standing on the drop, with the rope about his neck, he informed the spectators that such commerce with female children had been the governing passion of his life."

The Dr. and his friends thought that my delineation of the character of Kennedy was exceedingly accurate, but I was not satisfied; for I did not, and at the time could not, indicate the direction his sexual propensity had taken; and yet I could not doubt that his sexual propensity for female children had a physiological cause, and I desired a knowledge of it, and resolved, if possible, to discover it. His cerebellum was very

deep in its mesial position, the condition from which I inferred the importunate character of his amatory propensity, — the organs of which I had previously become fully assured by pathological evidence. Between the mastoid processes his cerebellum was very unusually contracted, and this condition I remembered to have seen in five other men who had perpetrated the same variety of crime, and of two of whom I had the crania, and the other three I saw in state's prisons. Such a uniformity of this condition induced me to suspect that with such men there was an organic defect.

I analyzed the reproductive function, and concluded that sensation and motion were as indispensable as desire; and as he had manifested motor power enough to take his neck to the gallows, and as deficient animal sensibility would, as I conceived, explain his desire for female children, so I thought it probable that his endowment of animal sensibility was greatly insufficient; and this I was inclined to attribute to the small development of the extreme lateral portions of his cerebellum.

Having concluded that the faculties of sensation and motion were primitive and independent; and also arrived at what I deemed a probability as to the nature of his condition; I was prepared to undertake the discovery of the organs of the two faculties above named, but more particularly that of sensation. In addition to the skull of Kennedy, and also those I had of other men, executed for the same variety of crime, the mastoid processes did not stand out boldly, as they do in most human crania; on the contrary, they were depressed, and so was the occipital bone adjoining them, respectively.

My first observation was made on my carriage horses, which were of about the same age, size, color, and keeping. I took them out of a close stable, on a cold and frosty morning, which caused a shivering of the entire surface of one of them, the other appeared as insensible to the atmospheric condition as if he had been dead; this difference arrested my attention, and I immediately examined and compared their heads. The mastoid processes of the sensitive horse stood out boldly from his head, and the adjacent portion of the occipital bone was full; the de-

developments of the other were precisely the reverse: his mastoids were depressed, and greatly concealed by the soft parts. The development of the two horses were as different as were their manifestations.

I now placed every human head that came into my presence under contribution, when propriety permitted. By this procedure it was but a month or two before I became satisfied that the extreme lateral portions of the cerebellum are the organs of animal sensibility, or, as I understand the subject, they constitute the nerve centre. When these organs are largely developed they cause the mastoid processes to project from the head, and a fulness of the occipital bone interiorly and posteriorly to them, respectively. In living subjects, the cervical muscles which are situated posteriorly to the mastoids, have a full or fleshy appearance when the organs are large. These organs, I infer, are always diseased or subjected to undue pressure in cases of hemiplegia of sensation.

A high development of these organs indicates a tendency of the body to grossness or fulness. Females who adopt the courtesan profession from inclination have a high development of these organs. Their high development is also the cause of nymphomania, I believe. Inveterate masturbators have those organs small, and so have those who have an intemperate desire for commerce with female children. I have the crania of three men, one black and two white, who were executed for rape on little girls, and I have seen several men in state's prisons for the same variety of crime, and all of them had these organs small, and the amatory organs large.

The faculty of muscular motion. In my analysis of the reproductive function, I found that, to males at least, muscular motion is as much a *sine qua non* in the reproductive function as the instinct of reproduction or sensation, and hence indispensable to the perpetuity of the species; and hence I inferred it to be probable that its organ would be found in the vicinity of those of sensation and of the reproductive instinct, to coöperate with them. Knowing my carriage horses to be exceeding dissimilar in relation to their muscular qualities—the sensitive

one never balked, and the other would do nothing else, except through fear of the whip, consequently, I again examined their heads, and found the former to be very fully developed, about midway between the mesial line and the respective mastoid processes, and the latter to be to an equal degree depressed at the corresponding localities. At this time, I was travelling, and made it a rule to halt every team I met, and learn of the teamster the quality of his respective horses, with reference to draught. By this course, I was, in a few days, able to distinguish, at the distance of several yards, a true from a balky horse,—the faithful horses were uniformly much developed between the mastoid processes and the mesial line. Having thus become familiar with the locality and development of the organs of motion in horses, I directed my attention to men, and in a month, I could distinguish, at sight of the occipital portion of the head and neck, the faithful laborer from the shirker.

These organs are situated midway between the mastoid processes, respectively, and the mesial line, and in proportion to their development, the base of the occipital bone will be downwardly developed, and when large the superior lateral portions of the neck are full and fleshy, and when they are small there is a correspondingly deep depression near the base of the occipital bone, between the mesial and laternal muscles of the neck: and this, I think, to be invariably the case with those who have a scrofulous diathesis. Horses having these organs large are not adapted to the saddle or pleasure carriages—their muscles are heavy and their motions are rough, but for draught they are best. (I will state incidentally, that the mesial third of the cerebellum constitutes the organs of the "instinct of reproduction" or amativeness. The verity of this statement I have had placed beyond any possible doubt by pathological conditions. In the preceding 25 years, I have been consulted by seven men who were, respectively, the subject of severe paroxysms of pain, brought on by excessive commerce with the other sex, with a consequent loss of the amatory propensity. It is proper to add that in these cases, respectively, the organs of sensation and motion were but little developed.) When a man complains

of constant soreness and of paroxysmally severe pain on either or both sides of the mesial line, between the occipital protruberance and the foramen magnum, it may be pretty safely inferred that his commerce with the other sex has been intemperate. I have known several stallions and bulls to have lost their ability to procreate, and they were, respectively, very feebly endowed with the organs of sensation and motion. Dr. GALL remarks, "I have always observed that animals having a large and broad cerebellum were the most successful procreators;" but he never comprehended the secret of it, because he knew nothing of the organs of sensation and motion. We can now understand how it may be the fact that a mare or gelding may have a larger cerebellum than a stallion. If the former have large organs of sensation and motion, with even small organs of amativeness, they would have a larger cerebellum than a stallion with large organs of amativeness and small organs of sensation and motion; hence the fact, that some French physiologists found some mares and geldings with a larger cerebellum than had some stallions, did not prove Dr. GALL's conclusion to be an error, that the instinct of reproduction was referable to the cerebellum.

I have labored much to ascertain the essential function of the motory organs, but am not sure that I have succeeded; my conclusion, however, is that they are generators of motor power, for those who are highly endowed with these organs are sustained in their muscular efforts, and readily recover from muscular fatigue.

The discovery of the organs of sensation and motion demonstrated. In a little time after becoming confident that I had discovered the organs of sensation and motion, I returned to New Orleans, and in a day or so after my arrival, my colleague, Prof. HARRISON, called on me and solicited my presence at a *post mortem* examination of the brain of a youth of about 17 years of age, who died in the Charity Hospital. When taken to the Hospital, a year before his death, he had hemiplegia of sensation of his right side; he was represented as being an inveterate onanist before his seizure of hemiplegia, of which he

did not recover; and three days before his death he was assailed with hemiplegia of motion of his left side. When the Professor had concluded the history of the case, I informed him that I had discovered the organs of sensation and also of motion; he rejoined, "This case may furnish some confirmation of your discoveries."

When we had removed the brain from the skull to a table, I turned it upside down, and indicated to the Professor the organ of sensation of the left side. The first incision by the scalpel disclosed about half a drachm of encysted pus; at the sight of which the Professor exclaimed, "Here is a demonstration of your discovery of the organ of sensation!" I now indicated to him the organ of motion of the right side of the brain, and after a search of a few seconds, he said, "And here is a demonstration of the organ of motion;" it was a tubercle as large as a garden green pea of a bluish-gray color and granulated structure.

It presented no indices of inflammation.

A pathological fact in relation to animal sensibility. About a year after making the preceding discoveries, I gave a course of phrenological lectures, in the city of Columbus, Miss., and Dr. M. Estes was one of my class; a few weeks after the conclusion of my course, and I had left the city, I received from the Doctor the following letter:—

"Prof. Powell,—I send you a fragment of information, which you will know how to appreciate. One of our citizens left the city, a few days since, on a spree, and after dissipating two or three days, he returned, and sent for me. I found him suffering extreme soreness and pain in a space about as large as a half-dollar, precisely where you locate your newly discovered organ of animal sensibility. The opposite side of his body is so sensitive that he cannot allow his bedclothing to touch it, and the extraction of a hair from the same side of his head gives him very severe pain. Yours, &c. M. Estes."

A pathological fact in relation to the organ of motion. In '55, I was seized with hemiplegia of motion of my left side, and

three days subsequently the locality of the organ of motion of the right side of my cerebellum became very sore—not painful; two or three applications of galvanism removed the soreness, but under pressure it continued tender for five years. About a year after all tenderness left the part, even under pressure, a clairvoyant lady called on me, and as a drowning man will grab at a straw, so I requested her to take a peep into my brain, and inform me of its condition? She rose from her chair, walked round to my back, placed her finger on the organ, and said, "In there is a tubercule as large as a grain of black pepper, and of the color of gray limestone, the surface of it appears ragged; I think it is smaller than it has been; and you will again have the use of yourself."

I do not comprehend clairvoyance, but that some people have such a faculty, I have had too much evidence to doubt.

With a practical application of these discoveries, I have done. All writers on masturbation, whom I have consulted, treat of it as being an acquired vice, but this I am confident is an error. It is a physiological vice, the result of a malorganization. When it is acquired, it never becomes inveterate, and marriage is the most appropriate remedy; but when it results from an abnormal organization, marriage greatly aggravates it. To such men a woman is not only as useless, but as objectional as would be a fifth wheel to a wagon. This condition results from a high endowment of the mesial or amatory third of the cerebellum, and a feeble endowment of the organs of sensation. Those having also a feeble endowment of the motory organs, the vice may induce inflammation and suppuration in the amatory organs, and then follows demensia and death. These may be rare results of the vice, but they do obtain. This truly unfortunate organization, more frequently than otherwise, results from physiologically incompatible marriage; and hence this vice is usually associated with a scrofulous diathesis, and hence phthisis is not an unfrequent sequel of this vice. It has been taught by some, that this vice is a cause of phthisis. An exciting cause it may be, I admit, but not the remote.

I have visited, probably, a majority of the lunatic asylums of

our country, and found in many of them masturbators of both sexes. About 15 years ago, or a dozen years after making the preceding discoveries, I visited a lunatic asylum in one of the Southern States. The physician of the institution and myself had been fellow-students and graduates. He conducted me through the institution, and in our progress we entered a room in which were six male masturbators, with their hands bound behind them. I inquired of the physician the object of it? He answered, "To keep them from self-pollution." But do you expect by such treatment to restore them to society and usefulness? "No, Sir; but what else can be done? Their condition is not pathological, and hence they have no need of medicine." I rejoined, you are correct, Sir; their condition is physiological, and as physiology is a department of our profession, their condition is not beyond the resources of our profession. "What plan of treatment would you suggest?" Allow me to examine their heads, and I will respond. "Certainly, Sir; you can do so." I found all of them deficient in animal sensibility, and some of them in motor power. I explained to him my plan, thus:—procure a sufficient number of axes, wedges, and mauls; have a number of pretty large timber trees brought into the lot, minus the brush, and make these masturbators work them into convenient firewood; have them to begin their labor at daylight, and continue it till dark, and so closely too, as to make rest absolutely imperative; so that when they retire to their beds they will sleep instead of masturbating. By this labor their seminal glands will secrete less, and thus reduce their amatory irritation; the organs of sensation and motion will be more developed; and when by this labor the vicious habit is arrested, reduce their labor and provide them amusement, as music and dancing. By this plan, I am confident you may, in less than a year, restore them to their friends. This course will establish an equlibrium amongst the vital forces, which is a normal condition. This treatment will also remove the scrofulous diathesis from those of them who have it—and several of them have it.

He rejoined, "I fear your suggestion is impracticable with these youths—they are the sons of affluent planters, and they

would seriously object to their sons being made to labor." I interrogated, Is not your will the law of the institution? He responded, "It is." I rejoined, as these youths were sent here for treatment, and as it is your duty to restore them if you can; then, Sir, as I conceive, it is your duty to teach those planters that they must conform to the laws of the institution, or take their sons out of it. He rejoined, "Have you ever made a trial of this treatment?" Not thoroughly, but to an extent, on negroes, that satisfied me that it will succeed. "Your treatment favorably impresses me; and as it is both my duty and desire to restore all who are sent here, I will adopt your suggestion, and inform you of the result." He continued, "I have several female masturbators here; what can I do with them?" I answered, make them sweat over the wash-tub, or over the floors, in scrubbing them or in brushing them. "Their mothers would never stand it." If I were in your place they would have to stand it, or take them home. In two months, he informed me by letter, that he had restored to their friends two of the masturbators whom I saw, and had a flattering prospect of restoring them all.

I have seen, I think, ten women under treatment for nymphomania; with nine of them the organs of sensation were large, but in the tenth, they were small; she, I suspect, was a masturbator and not a nymphomaniac. In the nine the amatory organs were not large. These observations have caused me to depart from authority in relation to the precise character of this affection. It is not, I think, a maniacal desire for amatory relief, but a maniacal desire for the pleasure that sexual commerce affords them.

The faculties of sensation, motion, and amativeness I denominate the vital forces or faculties; and the abnormal development of their organs in relation to each other accounts for all the vices that obtain in the relation the respective sexes hold to each other, and very much of the abnormal condition of these organs results from the physiological incompatibility of progenitors. I saw in the New Orleans Hospital, a eunuch, the result of incompatible marriage. The individual had a penis, but

neither a beard nor testicles. The intellectual organs, those of the human sentiments and of sensation and motion, were respectably developed, but the mesial third of the cerebellum—the organs of the "instinct of reproduction" did not constitute a portion of the cerebellum. This individual was exclusively a neuter—had no instinct of sex, and could form no conception of it. I have the skull of this individual—it is a very remarkable illustration of human monstrosity.

A feeble development of the motory centre is, in my opinion, that condition which constitutes the scrofulous diathesis; and as I know the motory centre can be rapidly developed by exercise, consequently, I infer that judicious exercise in the open air, began in infancy, would save 75 per centum of those who otherwise would prematurely die of some scrofulous form of disease. The motory centre is, I doubt not, the source of involuntary respiration, and hence it is that a high endowment of this centre cannot coëxist with the scrofulous diathesis. Physiologists, I believe, regard the medulla oblongata as being the respiratory centre. But this conclusion requires some qualification; a high endowment of this centre is an indicator of the scrofulous diathesis. It is at the most, therefore, the source, only, of voluntary respiration.

ARTICLE II.

SINGULAR FREAK IN NATURE, OR MALFORMATION.

By D. O. CRIST, M.D., of Bloomington, Ill.

On the morning of the 27th of January, 1858, I was called to see Mrs. D., a lady of much respectability, in her first confinement. On entering the lady's chamber, seeing her mother leaving the bed, and Mrs. D. apparantly easy, I supposed at once that I had arrived too late, as the old ladies say. But a few moments stay convinced me that my conjecture was wrong. Although there was, as is generally the case in first confine-

ments, a cessation of the pains. But, however, in a proper time they returned; and I found them to be of that character so minutely described by CHURCHILL as the first stage of labor. Although her husband told me when he came that she had been suffering for fifteen hours, and was very bad. I found the pains quite regular, and to all appearance efficient. After proper time and observation, I proposed an examination per vaginum, which was acceeded to, though not without some fear on the part of the lady, as is generally the case in first confinements; but, however, by the assurance of the mother, they were soon removed, and I proceeded with the examination, and found that labor had commenced, and the parts were well lubricated and of proper temperature, and the dilatation of os uteri was good; and finding quite a large and roomy pelvis, I anticipated a speedy delivery, but found, on extending the examination, it proved to be a footling presentation. The membranes were not ruptured, nor did they protrude as they generally do in head or natural presentations. Being always cautious, in cases of that character, not to rupture the bag of waters, for fear that the feet may pass down, and the labor become more difficult by a prolapse of the cord. However, finding the labor not as far advanced as I expected previous to the examination, I excused myself for one hour; and not being able to get back by the time appointed, they had dispatched a messenger for me.

When I returned, I found the pains more efficient, and the membranes ruptured, and the child entering inferior strait; and in two hours' time she was delivered of a healthy but rather delicate female child. Finding the circulation in the funis active, I separated the child after ligating the cord twice, thinking from the appearance of abdomen and smallness of the child there must certainly be a second child. After the proper attention to the babe, I found, by taking hold of the cord, that it was scarcely long enough to extend externally to the vulva. But by making an examination, I found what I supposed to be another child, and it proving to be a footling also. After acquainting the grandmother (for such she was,) of the fact, of their being another child as I supposed, I then acquainted the

lady herself of the probability of her being a mother again soon, as there appeared to be another within the uterus; assuring her that all that was necessary for her welfare was for her to keep quiet, and I thought she would soon be delivered of a second child. However, the pains not coming on for some time, I ordered a decoction of secale cornuetum; thinking, in case of hemorrhage, that I would be prepared to meet the urgency of the case.

In the course of an hour from the time the first child was born the pains returned quite active, and in a few moments she was delivered of a second child, with the following singular and remarkable appearance:—

First in order comes the head, which was quite small in comparison to the body, not having any bones within, but covered tolerably well with hair, without the appearance of any eyes, but a small aperture for the mouth, or seemingly where it should be, this aperture extending down into the thoracic region. Not having opened the thorax, I cannot say if the lungs were well developed or not.

The neck was short, and almost as large in circumference as the head. The thorax was well developed in every respect, with the exception of arms, and there was not the least sign of arms, nor was there anything to correspond. The breasts or nipples were fully formed and quite prominent, much more so than natural.

The cord was rather singular, as many other parts of the child. As I said before, the cord was quite short, scarcely long enough to reach external to the vulva. But on coming to examine the cord and afterbirth, I found it quite singularly constructed. The cord from the well-formed child was one of the slender, short cords that we occasionally meet with, and joining as it were with the cord coming from the unnatural child, and terminating with but one placenta.

The cord from the unnatural child having quite a singular appearance: not being white and clear looking, as we generally find them, but rather a dark, grumous and apparantly of a gel-

atinous character; where it emerges from the child is rather higher up than it would be in ordinary children.

We now come to the nates, they having quite the appearance of an ordinary child. The anus appears to be natural; the generative organs are quite developed; and, as Artemus Ward says, we find it belonging to the female persuasion, with vagina and vulva, in fact, possessing all the paraphernalia that is generally accompanying that order.

The length of body, from nates to apex, was 5½ inches; the circumference of the body 13 inches; the thigh being 9 inches in circumference, and 3½ inches in length, containing one bone as it should.

At the joints it had the appearance as if there had been a string drawn tightly around, forming a crevice or stricture as it were.

The length of lower limb, from knee to heel, was 6 inches, and the circumference of the same 5 inches, and containing two bones as usual. The feet and toes were all natural and well-formed. But the child had quite a peculiar color, almost that of a red; but why it should be so I am somewhat at a loss to tell or decide, unless it was caused by the mother attending a ball. After dancing all night, she was taken unwell, and had quite a flow, so much so as to think she was going to miscarry; and perhaps the husband thinking it a time of frolic and revelry, he insisted on his rights as a husband, and she being of a kind turn and accommodating, yielded to his requests. The consequence was conception and cessation of the flow, and nature spliced on and remained till the time of gestation. Perhaps I should have said that the couple had only been married four weeks previous to the time of attending the dance. Hence the flow causing the peculiar color to the deformed child.

ARTICLE III.

AN EPIDEMIC OF ERYSIPELAS, CAUSED BY THE DECOMPOSITION OF ANIMAL MATTER IN CHICAGO RIVER.

BY E. ANDREWS, M.D., Professor of Surgery in Chicago Medical College.

Chicago, like the city of London, has received a vast annoyance from the foul condition of its river; and the discussion as to what will be the best means of removing the evil is still on the tapis undecided. Chicago River, at ordinary times, has no proper current of its own. It is a mere inlet of Lake Michigan, receiving scarcely any water from inland sources, and having very little motion, except the slight flow inwards and outwards, caused by rise and fall of the lake, from changes of wind. By reference to the accompanying map it will be seen that it consists of a North and South Branch, each extending a few miles only, and uniting to form a short main river, three-quarters of a mile in length, terminating in the lake.

The river and its branches vary from 150 to 400 feet in width, and the depth is sufficient to float the largest lake vessels. Into this torpid stream, from the necessity of the case, nearly all the sewers of the city run, carrying the liquid filth from the streets, dwellings, sinks, manufactories, and slaughter houses of over 150,000 inhabitants. Along the South Branch in particular, there is a great number of packing houses, where many hundreds of thousands of animals are slaughtered every year, the filth and offal of which block up with a semi-fluid mass of putrefaction the sloughs and watercourses which empty into the river, while the more solid refuse materials are or were carried out and deposited in the fields beyond.

The rapid and enormous growth of the city gave to this evil such an unexpected magnitude that the sanitary precautions previously found sufficient, were now made utterly ineffective; and during the summer and autumn just passed, the condition and odor of the river became abominable beyond expression.

The stench could be perceived for miles in the direction of the wind; and the parts of the city nearest the stream were filled with the foul effluvium to an insupportable extent.

Now, there is nothing more thoroughly proved in the range of human knowledge than the fact, that foul air generates innumerable diseases. It is also a fact well known to physicians that one of the earliest effects of air, contaminated with putrifying matter, is the appearance of numerous cases of erysipelas among the persons exposed to its influence. In accordance with this general law of nature, the autumn of the past year showed a decided increase of sickness of such kinds as ordinarily scourge ill ventilated and filthy localities only, and that too in some of the best quarters of the city. Erysipelas in particular began to be very prevalent, and in the month of November, assumed the proportions of an epidemic. In order to decide the question of the influence of the river in this disease, I instituted inquiries among numerous physicians in all parts of the city, and obtained from them the localities of all the cases which had fallen under their care, during the months of October and November. The localities of all these cases amounting to 68 in all, are marked by white croses on the map, and the infected district thus determined is surrounded by a dotted line to show its form. The tract thus marked out contains only about one-third of the population of the city, yet it embraces almost every case of erysipelas that showed itself. The only apparent exceptions which I met were where persons were habitually doing business near the banks of the river and slept at a distance from it. Such persons would take the disease from the river air and then go home and be sick outside of the proper boundary of the epidemic, though they took the disease within it. A single glance at the map shows how thoroughly the epidemic clung to the vicinity of the river, and sufficiently demonstrates the cause of its inroads; but a few remarks may be needed to explain some peculiarities in the outline. The arrows mark the direction of the prevailing winds in this region. The current of air being more frequently from the Southwest than from any other quarter, it follows that the effluvium of the

N
CHICAGO AVE.
LAKE ST.
VAN BUREN ST.
TWELFTH ST.
BLUE ISLD AVE.
HALSTED ST.
ARCHER ROAD.
CLARK ST.
STATE ST.
L. MICHIGAN.

river would be driven more extensively to the east than to the west. Hence it is readily observable that the epidemic had a wider margin on the east of the river than on the opposite side. It is noticeable also that the infected region had a peninsula-like prolongation westward, in spite of the wind, into the angle between Blue Island Avenue and Twelfth Street. This region is cut up into a great number of narrow and very filthy streets, without any efficient drainage. The slops, and every kind of abominable excrement, accumulate in the open gutters, and lie festering in the alleys and yards. This part of the city, therefore, though not receiving the full benefit of the river air, gets up on an independent basis a stench of its own, which answers every purpose for the increase of medical practice in general, and of erysipelas in particular.

Another point of interest is the enormous preponderence of cases which occurred on the east side of the South Branch, between Van Buren and Twelfth Streets. This is doubtless owing to the fact, that the prevailing south-westerly winds sweep lengthwise of the South Branch from Bridgeport to Twelfth Street, coming for three miles along a line of unspeakable filth. The river here bends to the north-west, leaving a region to the east of it across which the putrid effluvia sweep in a greater degree of concentration than in any other part of the city. The erysipelas in this epidemic usually attacked the face, and was generally curable by free use of the muriated tr. of iron, or by the sulphites of lime and soda. I continued to perform surgical operations during the whole time, without any of the fatal erysipelatus complications common in such epidemics, and the safety of my patients I attribute to the fact, that I put every one of them upon the use of the tincture of iron, as a prophylactic, immediately after the operation, without waiting for any actual appearance of the disease. I have now followed this custom for several years, and I find that in this way traumatic erysipelas and pyæmia may be almost banished from surgical practice, even in very unfavorable periods.

The Board of Public Works have had various plans under consideration for the purification of the river. One is to cut

two canals from the lake, one to the head of the North and the other to the South Branch, and to throw in through these, by means of a wheel propelled by steam, a powerful current. In this way the water may be changed every twenty-four hours. Another plan is to cut the Illinois and Michigan Canal down to the level of the lake, and feed it by the river itself, thus drawing in pure water from the lake. The enormous and unexpected growth of the city, however, has taken everything by surprise; and before any plan could be executed, the evils of impurity were already upon us. At present, a temporary cure has been obtained by turning this way the waters of the Canal feeder, which create a current and keep the South Branch in a tolerably good condition. The kindly action of the frost too has covered the water with a thick stratum of ice, which is, for the winter, an effectual remedy. Next spring, however, the ice will melt, the canal feeder will be required for its original purposes, and, unless some effectual measures are taken, the evil will be upon us again with augmented magnitude. I have shown the effect of the river in only one disease, but it must not be supposed that erysipelas is the only sickness produced by filth. Typhoid and typhus fevers, malignant dysentery, typhoid pneumonia, and epidemic and malignant forms of a whole host of diseases follow in the train of such causes. No city can be bathed in putrid air with impunity; and if Chicago shall neglect to make a thorough removal of its filth, it will be infallibly scourged with these pestilences which through all time have smitten cities that commit similar sins against cleanliness and pure air.

ARTICLE IV.

CASES READ BEFORE THE CHICAGO MEDICAL SOCIETY. FRIDAY EVENING, NOV. 13, 1863.

BY HIRAM WANZER, M.D., of Chicago, Ill.

MR. PRESIDENT AND GENTLEMEN.—I present you two pathological specimens. One a cancer of the uterus; the other a

bony specimen of comminuted fracture. I have lately had three interesting cases of injury of the knee-joint, which I will relate; together with other cases which may be of interest to the Society.

The first case was a compound comminuted fracture of the tibia and fibula at the upper third, caused by a rail-car passing over the limb, crushing the bones in numerous fragments, and reducing the neighboring soft parts to a mere pulp. Stimulants were freely given to promote reaction, Dr. FISHER was sent for. By the time we were ready for operating, reaction, we thought, was sufficiently established. I amputated at the lower third of the thigh. Only the femoral artery required ligation. This was about 5 o'clock P.M. I requested the family to send for me at 4 o'clock the following morning, should he be living.

As the messenger was leaving the room, the patient rallied and conversed with his friends. Not 15 minutes elapsed, and before the messenger had time to reach my office, he sank in the arms of death, without a struggle.

To me there appears something singular in this sudden death. He had been semi-comatose up to 15 minutes before death, when he suddenly rallied, cheering friends with bright prospects of a certain recovery. Many of the Society, older in the profession than myself, having witnessed many death-bed scenes, can perhaps better account for it.

The second case, a German, æt. 30, was run over by a rail-car, receiving a compound comminuted fracture of the tibia at its upper third; also fracturing one of the condyles of the femur.

The bony specimen is before you. The soft parts were in the same condition as the case previously mentioned. I dispatched a messenger for Prof. E. ANDREWS, who, upon his arrival, examined the injury and found that the fracture extended to the cavity of the knee-joint. He advised, as the only alternative, for the patient, immediate amputation. I amputated at the lower third of the thigh, as near the joint as possible. Only the femoral artery and a small muscular branch required liga-

tion. The patient had long made too liberal use of the various alcoholic drinks. The fourth night after amputation, delirium traumaticum supervened, and it became necessary to give freely his accustomed beverage, which overcame these symptoms. But while we were overcoming the delirium on the one hand by the stimuli, we were at the same time inducing a hyper-excitement of the heart and arteries on the other. In a very short period, alarming secondary hemorrhage from the femoral artery occurred, which, however, was speedily controlled by compression over Poupart's ligament. The hemorrhage recurred at intervals for one week; so that it became necessary to withdraw stimulants altogether. Will that blissful period ever dawn upon our profession, when some substitute for alcohols, in medicine, will be devised. They carry with them a polution and a degradation which can never be washed away; and our profession to-day are in part responsible for their inordinate use. But this was not the only pathological feature in the case. Traumatic erysipelas occurred in the stump, resulting in suppuration and sloughing of a part of the soft parts of the thigh. A free incision obviated a part of this difficulty.

The stump now looks well, and is healing rapidly by granulation; and I regard the patient as completely out of danger.

The third case was an injury of the soft parts in the popliteal space, without fracture. The man fell upon the railroad track. The wheels of a loaded wagon passed over the limb, dividing the soft parts transversely, nearly across the popliteal space, just below the joint. The internal head of the gastrocnemi muscle was divided, together with the internal articular arteries, veins, and nerves; and I apprehend the popliteal artery also. The instantaneous hemorrhage was alarming. When I arrived he was apparently exsanguine, and exhausted from loss of blood. The shock I consider greater in this case than either of those we amputated. As the hemorrhage had ceased before I arrived, I flexed the leg upon the thigh, it being the only way the parts could be brought in apposition. This method assisted also in preventing future hemorrhage. Several interrupted sutures, compress, and strong bandage were all

the treatment necessary at this time. Reaction was not established to any degree until the next morning.

I continued flexion until the wound was nearly healed and the danger of secondary hemorrhage passed. The same symptoms of delirium traumaticum supervened, as with the other, and it became necessary to give him freely his accustomed beverage, until this danger was overcome; supperadded to these aggravated symptoms, there was a phagadenic inflammation of the superficial structures of the thigh. The granulations assumed a most unhealthy appearance. The suppuration extended along the fascia and flexor muscles of the thigh to near the hip. This suppurative diathesis was soon overcome by generous diet, large and frequent doses of tinct. ferri muriatis. The matter was localized by a compress and strong bandage above. I commenced extension before the wound entirely united. At present there is no perceptible shortening, and he walks easily with a cane.

The fourth case was a dislocation of the shoulder. The head of the humerus was thrown forward under the clavicle, and felt there distinctly. There was undue prominence of the acromion process. I placed him in the recumbent posture, and with my heel in the axilla made extension in the manner I have previously, where the head of the humerus was dislocated downwards in the axilla. This manipulation proved unavailing. As the dislocation was sub-clavicular it was necessary to make extension obliquely downwards and backwards, it being in a direct line with the displacement. By this most simple method the humerous was easily dislodged and entered the glenoid cavity. I would ask the Society, how many dislocations of this kind they have met with? As our books do not make frequent mention of them.

The fifth and last case I will present you this evening was cancer of the uterus. I was called to Mrs. T., æt. 44, mother of five interesting children. She had been suffering with cancer of the uterus six months. The intolerable odor emitted led me to diagnose the case as cancer upon my first entrance into her chamber. A few of her more general symptoms I will

briefly describe. There was severe lancinating, hypogastric, lumbar, and femoral pains, often amounting to agony. There was an occasional sanguinolent, and a constant fetid discharge from the vagina. Her countenance was hippocratic, and there was extreme emaciation, a yellow tinge of the skin, and hectic fever. Constant vesical and rectal irritation, and continual constipation. The bowels were never moved without cathartics or laxative enemas. Her appetite remained unusually good. These were the symptoms when I was first called, significant of malignant disease. A digital examination revealed the lower fifth of the recto-vaginal septum and the posterior lip of the os and cervix uteri converted into a mass of schirrus. The anterior lip of the os and cervix uteri had previously disappeared from ulceration. The schirrus mass mentioned sloughed away one week previous to her death, opening the vagina and rectum into one passage; and I apprehend the bladder became perforated also. The irritation of the intestinal and urinary discharges became then so great that I think it hastened her dissolution. She lived seven weeks after my first visit. The treatment was only paliative: large doses of morphia frequently given to allay pains; strong laxative enemas and chlorine washes constituted the major part of the treatment. Autopsy revealed what you see. The fundus and body of the uterus a mass of schirrus. The os, cervix, and lower part of the body of the uterus, and lower fifth of the recto-vaginal septum entirely sloughed away by ulceration. The ovaries, fallopian tubes, broad ligaments, and the other appendages of the uterus, do not seem to be involved in the disease.

Dr. JOHN BARTLETT assisted me at the *post mortem* Had I had time, I should have invited other members of the Society. In conclusion, I must apologize to the Society for the imperfect manner I have presented these cases.

ARTICLE V.

CLINICAL REPORTS.

CEREBRO-SPINAL MENINGITIS—LETTER FROM A CORRESPONDENT—CLINICAL REMARKS IN REPLY; BEING THE SUBSTANCE OF A LECTURE TO THE CLASS IN THE CHICAGO MEDICAL COLLEGE.

By N. S. DAVIS, M.D., Prof. of Practical and Clinical Medicine.

By cerebro-spinal meningitis, we mean an inflammation of the membranes and surface of the base of the brain, medulla oblongata, and upper part of the spinal cord. Ordinary inflammation of this portion of the nervous system is not of frequent occurrence in general practice, although occasionally met with, both in adults and children. When it does occur it is always dangerous, and often speedily fatal to the patient. This arises from the direct connection of this portion of the nervous centres, with the most important functions of animal life, such as respiration, circulation, and deglutition. An attack is generally ushered in by chilliness, followed by general febrile reaction; pain in the occipital region, often extending to the back of the neck and shoulders; stiffness or rigidity of the muscles of the neck and jaws; sometimes cramps in the muscles of the arms, with difficulty of deglutition; a contracted, frequent, and variable pulse; hurried respiration; and, as the disease advances, delirium ending in coma. While sporadic cases of this inflammation are not of frequent occurrence, a modified form of it has often occurred as an epidemic, in circumscribed localities. When thus occurring epidemically, it has been found to have been either closely associated with the prevalence of erysipelas, or connected with the same circumstances that usually originate typhus and pyæmia, namely, close and ill-ventilated rooms, over-crowded and uncleanly camps, &c.

We are occasionally informed of its occurrence and alarming fatality in very limited country districts.

Close inquiry, in most of such cases, will reveal the fact that those attacked have been sleeping in very small, or altogether

over-crowded rooms, without any ventilation whatever. Such was found to be the case with some families in a neighborhood near Valparaiso, Indiana, in which the disease appeared and proved rapidly fatal, soon after the intense cold weather that ushered in the present month.

Only two days since, I received the following letter from a medical friend at Manckport, Harrison County, Ind.:—

"PROF. N. S. DAVIS,

"*Dear Sir:*—Knowing that you have the opportunity to inform yourself concerning all forms of disease, I drop you a letter to ask your views in regard to a disease that is prevailing in this county, to an alarming extent. So far as my knowledge extends, every case that has occurred, up to the present time, has proved fatal. The person attacked, complains of a slight cold for about 24 hours, when a moderate chill occurs, lasting from one to two hours.

"This is immediately followed by pain in the back of the neck, spine, and limbs; stiffness or rigidity of the muscles of the neck and jaws; and soreness or morbid sensibility of the surface, even to the ends of the fingers and toes.

"In half an hour the jaws become closed, with loss of speech, followed in a short time more, by complete unconsciousness. Death usually follows the coma, in from two to three hours. Please give me some information concerning this disease, if your time will permit, and greatly oblige, yours truly,

"H. K. DEEN."

The description here given, though brief, is sufficient to identify the disease as a cerebro-spinal meningitis.

The pain extending from the occipital region down the spine, with rigidity of the muscles of the neck and jaws, morbid sensibility or soreness of the flesh, especially of the extremities; followed so speedily by unconsciousness and death, point unmistakably to the cerebro-spinal axis as the seat of the disease. The rapidity with which the disease progresses to its final termination, is one of its most striking features. Thus the distinct chill or chilliness that marks the onset of severe symptoms is

often followed by death in from six to twelve hours. But the *post mortem* examinations made by Dr. UPHAM and others, reveal not only the appearances of inflammation in the membranes enveloping the medulla and base of the brain, but more or less purulent or sero-purulent effusion. The rapid progress of the disease; the exceedingly brief period in which the suppurative process is established; with the sudden and generally fatal exhaustion of the patient; all indicate that the inflammation is of a strongly asthenic or septic character. This view of its nature is further indicated by the fact that the disease has often been associated with epidemic erysipelas; with the foul air of crowded military camps; and with small, unventilated lodging rooms in country districts.

If this view of the special character of the inflammation in epidemic cerebro-spinal meningitis is correct, it enables us readily to understand why the treatment by antiphlogestic and sedative measures on the one hand, or by simple stimulants and tonics, on the other, very generally fails to exert an appreciable control over the progress of the disease. It is well known that bleeding, general and local; cathartics; and sedatives, have been used without any apparent benefit.

When the disease has occurred in districts naturally malarious, quinine and stimulants have been freely used; and if I remember correctly, both were used in most of the cases reported by Dr. UPHAM, but with no apparent influence over the progress of the disease. Calomel has also been used, both in cathartic and alterative doses; but with no more success. Indeed the rapid progress of the disease affords not sufficient time to gain any important alterative influence from the mercurial preparations. And if the special character of the inflammation in these cases, is asthenic or allied in nature to pyæmia, as I have already suggested, mercurialization as well as depletion, is directly contra-indicated. The clear indications for treatment in such a grade of inflammation, are to increase the contraction of the capillaries of the inflamed part for the purpose of retarding the accumulation of blood in them; and to change the aplastic or septic condition of the blood, thereby preventing if possible,

the rapid development of the suppurative process with effusion. Being satisfied, from much clinical observation, that the views of BROWN SEQUARD, in relation to the action of belladonna on the cerebro-spinal centre, are correct; we should regard that agent as one of the most efficient for accomplishing the first indication named; while to meet the second indication we must rely on those remedies found most efficient in erysipelatous and pyæmic inflammations, such as the tincture of the chloride of iron and the sulphites of soda and lime.

During the last six months, five cases of cerebro-spinal meningitis have come under my care. The first was a boy, about 12 years of age. He had complained of headache and weakness for one or two days; but the severe characteristic symptoms did not commence until Saturday evening, and he died the following day in the afternoon. I saw him first, late on Saturday evening. I directed ice to his occipital and cervical regions; opened the bowels freely by a mercurial purge, and followed it with iodide of potassa. The next morning, he was visited by my colleagues, Professors ANDREWS and JOHNSON, who advised the use of quinine. The loss of consciousness and difficulty of deglutition, however, prevented the exhibition of more than a single dose.

The second case was an adult, female, and the mother of several children. After having felt some lassitude and indisposition for one or two days, she had a moderate chill, followed by some febrile reaction; severe pain in the back of the head, neck, and shoulders; with some convulsive movements and rigidity of the extremities. Alarmed at these symptoms, I was sent for in great haste, but did not reach the patient until about three hours had elapsed. I found her with moderate heat of the skin; an anxious expression of countenance; a small and frequent pulse; rigidly contracted condition of the muscles on the posterior part of the neck, causing the head to be drawn a little back, the jaws stiff, and deglutition difficult. The muscles of the arms were in a similar state of rigid contraction. All attempts to move the head and shoulders greatly aggravated the sufferings of the patient. The death of the boy, only a few

days previously, had caused me to reflect much on the nature of the supposed inflammation in these cases, and I determined to put this patient directly on the use of the *sulphites* with belladonna. I accordingly directed 15 drops of the tincture of belladonna and half a drachm of sulphite of lime to be given at once, and repeated in half an hour, after which they were to be taken every hour, until the muscular rigidity ceased, or the specific effects of the belladonna were visible on the pupils of the eyes; after which the interval was to be extended to four hours. Ice was applied to the neck and occiput.

Under this treatment the muscular rigidity, pain, and fever soon began to abate, and in 24 hours all the severe symptoms were relieved, except stiffness of the neck and giddiness, with some pain whenever attempts were made to move the head. Under the moderate use of the same remedies, she continued to improve; and in four or five days was able to sit up. Her limbs, however, remained weak, and she was troubled with some unsteadiness in walking for ten or twelve days.

The third case was a boy, only two years old, in the same neighborhood with the second case, and was under treatment at the same time. The symptoms of cerebro-spinal inflammation were well marked, and the treatment the same as in the preceding case, only adapting the doses to the age of the patient. The relief was prompt and permanent, the child recovering fully in a week.

The fourth case was an adult, male, naturally athletic and healthy. He had been employed for some time as tender of a bridge, over the North Branch of the Chicago River: and that stream was at the time in a very foul and offensive condition. He was atacked in the night with a well-marked chill, followed by pain in the back of the head, neck, and shoulders; stiffness of the muscles of the neck, and frequent severe cramps in the muscles of the legs and forearms. When I was called to see him in the morning, his expression of countenance was haggard and anxious; his pulse small, frequent, and compressible; tongue moist; skin covered with moisture; mind depressed and taciturn; with considerable pain and stiffness in the neck, but,

at that time, no cramps in the extremities. Learning that the patient had had a well-marked chill, followed by fever and pain, while he was then perspiring, I too hastily inferred that the case was one of irregular and severe malarious fever; an inference which would have been corrected readily had I given due attention to the locality of the pains and the condition of the muscles of the neck and extremities. As it was, however, I ordered the patient six powders, each containing sulphate of quinine, 3 grs., sulphate of morphia, $\frac{1}{3}$ gr., and calomel 2 grs., one to be given every three hours.

Before they were all taken, he became so furiously delirious that no treatment could be continued, and he died in little more than 48 hours after the commencement of the attack.

The fifth case occurred about two weeks since. The patient was a well-known citizen, aged about 50 years. On going out to his business in the morning, he felt some stiffness of the back of his neck, with an approach to vertigo or a slight sense of unsteadiness in walking. These symptoms were too slight to attract much attention during the day. About 5 o'clock P.M., he stepped into the office of a friend, where he suddenly became so affected with a sense of vertigo and exhaustion that he came near falling. He recovered his steadiness in a few minutes, and, accompanied by his friend, returned to his residence. During the evening he was chilly, and complained of severe pain in the back of his head, neck, and shoulders, with constant rigidity of the muscles of the neck.

These symptoms so rapidly increased in severity, that at 3 o'clock in the morning I was called out of bed to visit him. I found him with a countenance expressive of extreme anxiety and suffering; skin hot, but covered with perspiration; pulse small, frequent, and firm under pressure; tongue slightly coated; head drawn back and fixed firmly in its position by a rigid contraction of the muscles of the neck and jaws. He complained of intense pain in the back of the head and neck, extending in severe sharp paroxysms to the shoulders and right side of his chest. Every attempt to move the head or shoulders so aggravated these paroxysms of pain as to literally terrify the patient.

The skin being covered with perspiration, caused as the patient alleged by the severity of his pains, I did not deem it prudent to apply ice to the neck and occiput; but on the contrary ordered the application of cloths, kept constantly wet in a tepid infusion of aconite leaves. Internally, I directed 20 grs. of sulphite of soda, dissolved in a dessert spoonful of mint water, with 12 drops of the tincture of belladonna, every half-hour, until three doses were taken, and then once an hour, until my next visit. I also directed a powder containing 3 grs. of calomel and 6 grs. of Dover's powder, to be given every three hours. I visited the patient again in five hours. All my directions had been faithfully executed.

The second dose of calomel and Dover's powder caused slight vomiting, by which a part of it was rejected. On this account no more of them were given.

The only important changes in the condition of the patient were, a slower pulse; a more cheerful state of mind; and a subsidence of those severe paroxysms of pain through the shoulders and chest. The head was still firmly retracted, with pain in the neck, greatly aggravated by the slightest motion. I directed the sulphite of soda and belladonna to be continued every hour and a-half, and also, the narcotic fomentations to the neck. The patient continued to improve gradually through the day; and at night I directed the interval between the doses of the sulphite of soda and belladonna to be increased to two hours; and give three compound cathartic pills to move the bowels. On the following morning, I found the patient cheerful; the skin natural; pulse 85 per minute and soft; no pain while entirely still, or when slowly and cautiously rotating the head; but still inability to bring the head forward, or to indulge in any active movements without suffering. The pupils were moderately dilated by the belladonna, but there had been no movement of the bowels. I ordered a bottle of liquid citrate of magnesia to be taken in divided doses until it should operate, while the sulphite of soda and belladonna were continued every three hours. During the succeeding 24 hours, the bowels moved freely three

times, and the patient continued steadily to improve; though he complained of much lassitude and general weakness.

I continued the sulphite of soda and belladonna every six hours for two days longer, with nourishment; at which time the patient was able to leave his bed, though still feeling difficulty in bending the head forward, and some unsteadiness in walking.

I then directed a prescription consisting of bromide of ammonium, disolved in syrup of wild eherry bark, to be taken three times a day; and the recoveey has since become complete. It must be remembered that during the time that these cases were occurring, erysipelas was unusually prevalent in the city; and the general sanitary condition ot the whole city bad. The treatment of those few cases is not sufficient to test the value any of the remedies used. But if the inflammation, in these epidemic and rapidly fatal cases of cerebro-spinal meningitis, is of that specific character, which renders it analagous to erysipelas or pyæmia, as we have already suggested, then certainly, we must look for remedies chiefly to such articles as will counteract the septic or suppurative tendency, with such narcotics as diminish the morbid sensibility, by contracting the cerebro-spinal capillaries. Of the first class of articles, we know of none more reliable, or capable of being more rapidly introduced into the system than the tincture of chloride of iron, and the sulphites of soda and lime, and the chlorates. Of the latter class, the preparations of belladonna and strammonium are doubtless most efficient. But for any class of remedies to be efficient in a disease so rapid in its progress as cerebro-spinal meningitis, they must be administered early and efficiently.

VELOCITY OF NERVOUS FORCE.—The *Veterinarian* states that by the aid of a chronoscope M. Hirsch has come to the conclusion that nerves transmit their impressions at the rate of 34 metres a second. M. Heinholtz estimates the velocity of 190 feet per second, but his experiments were performed on the motor nerves of a frog, and those M. Hirsch on the sensitive nerves of a man.

Selections.

THE SURGICAL TREATMENT OF AMENORRHŒA.

By HORATIO R. STORER, M.D., of Boston, Surgeon to the Pleasant Street Hospital for Women.

Read by invitation before the Norfolk District Medical Society of Massachusetts. 1863.

The medical treatment of amenorrhœa has been fully discussed by a host of writers upon the subject; among the last of them, and very understandingly, by Dr. Wm. E. Bowman, of Montreal, in the *Canada Lancet*, for June, 1863. Inasmuch, however, as there are certain cases of the affection which, in the most skilful hands, resist all of the therapeutic measures instanced, either in our usual text-books, or in the valuable paper alluded to, it may be of practical advantage to take up the subject just where it is there left, namely, in its relations to obstetric surgery.

Cases of amenorrhœa, while among the most frequent of those applying for aid, and, from their very diversity of origin, among the most interesting, have often been found, in practice, the most tedious and discouraging. Certain possibilities also of mistaking their real character, and of unintentionally, and so far innocently, committing malpractice, and thereby of adding confirmation to an opinion already but too prevalent, that the profession directly, or by implication, sanction the induction of criminal abortion, render them among the most important to which our attention is called.

There are two dogmas concerning them, however, that, with all respect for the large and influential class of practitioners by whom they are held, should not be accepted. They are the following, and I prefer to state them as expressed by writers of authority:—

"It is easier," says Churchill in his last edition, "to manage almost any of the other curable diseases to which females are obnoxious."*

"All attempts," remarks Condie, "to bring on the menstrual flux by directly irritating the uterus, whether by the introduction of bougies or not, are unjustifiable; we can conceive of no case in which they would be calculated to do good; they cannot fail, in many cases, to be positively injurious."†

* Diseases of Woman, p. 152.

† Editorial note to Amer. ed. of Churchill, p. 149.

In practice, such statements are daily disproved.

As a general rule, it will be found, recollecting the possibility of an unusually early occurrence of the menstrual climacteric or normal cessation, that amenorrhœa which has resisted all the therapeutic measures usually resorted to, depends, in the absence of pregnacy, upon one or other of the following causes:—

1. That the uterus is absent, or
2. Imperfectly developed;
3. That it has undergone too completely the process of involution after normal labor or an abortion;
4. That the nisus uterinus of menstruation or nervous excitability of the uterine mucous membrane is in abeyance, even though the ovarian excitability, and even the performance of their peculiar function, may be normal and complete;
5. That the cervical canal or its inner orifice is partially contracted, organically, or by tonic or clonic spasm;
6. That there is complete occulsion, congenital or acquired, of either the uterus, vagina, or external organs;
7. That there exists metritis, acute or chronic, or some other general affection of the uterine mucous membrane, or a chronic retention within its cavity, as of fœtal debris;
8. That there is lesion, usually inflammatory, of one or both ovaries; producing its effect, perhaps, by derivation, or prevention of the usual and normal sanguineous determination;
9. That there is present either general toxæmia, some distant organic disease, by its local congestions preventing the usual afflux of blood to the uterine system, or some distant functional disturbance giving rise to a drain upon the general system, whether hemorrhagic, diaphoretic, leucorrhœal, diabetic, or lacteal.

Any of these varieties, though more frequently the latter, may be attended by vicarious menstruation from distant surfaces, causing often the gravest errors respecting the true character of the disease; a fact that explains many of the cures of so-called phthisis, chronic dysentery, &c., by irregular practice.

The several classes instanced are all more or less commonly met with, and are all amenable to treatment. From this statement I do not even except certain instances of the first class, those where the uterus is entirely wanting, which require, as will be seen, even more judgment and skill than any of the others.

Depending upon such varied causes, it is evident that the utmost care is necessary in the differential diagnosis of any given case; and though I do not now propose to discuss the respective

characteristics of either or any of the different varieties, there are yet certain surgical considerations bearing upon this point, of such importance as here to demand mention.

First and foremost; a thorough physical examination of the patient, in cases of amenorrhœa that have resisted all the resources of general treatment, becomes absolutely necessary. As a rule, unmarried women should never in any case be subjected to such examination, unless the existence of organic disease or displacement is undoubted or reasonably suspected, or the woman has previously borne children, until all ordinary strictly medical measures have been brought to bear. On the other hand, married women, presenting any of the symptoms usually diagnostic of uterine or ovarian disturbance, should never be prescribed for until a proper physical examination shall have been effected.

2d. The examination when made, if in the case of an unmarried woman, should generally be aided by an anæsthetic, alike to prevent mental and physical suffering, and by complete relaxation of all pelvic muscular action to facilitate the diagnosis. The usual plea for refusing an anæsthetic at this time, that it is well for the patient to be able to realize her pain, I consider of no weight whatever; so deceptive are the reflex sensations produced by local pressure within the cavity of the pelvis, that it is of far greater advantage to have them altogether absent.

3d. Except in the instance of atresia vaginæ, or some other local lesion absolutely demanding direct vision, the examination, especially in the case of an unmarried woman, should be only by the touch and that longer finger, the uterine sound. The obstetrician should always carry an eye at the end of his forefinger, and it is just as easy to educate the touch to this, as for the blind to their alphabet. Were the use of the speculum confined to the cases where alone it is legitimately required, namely, the comparatively few instances actually demanding local stimulation or cautery, there would be far less quackery in obstetric practice, and far more general appreciation of the real frequency and importance of uterine displacements.

4th. In using the uterine sound, which is here indispensible in many cases to a correct diagnosis, the possibility of pregnancy must be borne in mind, even though the patient be unmarried, no matter how respectable her position, correct her general history, extensive her hymen, or of what standing the absence of her menses; for in default of this precaution many an unexpected abortion has been induced.

This premised, I proceed directly to the surgical treatment of amenorrhœa.

In the first place, the uterus is sometimes absent, and I have said that where this has been diagnosed, there are required extreme judgment and skill. It is often much more difficult to withhold the hand than to attempt aid, but it is evident that in many cases all assistance must be absolutely impossible. There are others, however, where the ovaries exist, and are perhaps well developed, and where there is an evident ovarian molimen. Here the question of attempting treatment will depend upon the theory held by the attandant, as to the essential nature of menstruation, and upon the condition of the patient during these monthly attempts at effective discharge. If the normal catamenia, which must be allowed to be strictly uterine or almost entirely so in their actual origin, are viewed as a mere incident or effect of the irritation or irritability consequent upon ovarian evolution, or as a mere independent excretion for the purpose of conveying from the uterus the unimpregnated ovum, it would hardly seem necessary ever to endeavor to assist nature in the cases to which we are now referring. But if, on the other hand, we grant that this discharge, while partly and by reflex action the effect of the ovarian irritability just alluded to, may also serve as a relief by crisis to any local congestion or disturbance dependent upon the same reflex action, and so evident in almost all cases of disordered menstruation,* and that the uterus besides, as has been well shown by Andral and Gavarret, is intended to act as an accessory respiratory organ,† then it may be thought judicious practice to endeavor to avert such congestion or disturbance by local depletions, dry cupping, &c., to the sacrum, abdomen, or region of the perineum. This treatment is undoubtedly indicated in plethoric patients, where the uterus being absent there is yet a molimen, and I am inclined to think it of importance in others, even where general congestion may not be present.

Secondly, the uterus being present, but as yet undeveloped. Here let me allude to the fact that conceptions may take place even though menstruation may never have occurred, and though

* My eighth class, where suppression of the menses accompanies ovaritis, though at first sight contradictory of the above hypothesis, really goes to confirm it; actual inflammation being a very different thing from a normal and strictly physiological congestion, and productive of wholly different effect.

† The importance, in this connection, of the above views I have elsewhere more than once insisted upon. They tend to explain the otherwise inexplicable fact of the immunity of chloroform from ill result during labor, the altered ratio of progress of phthisis during pregnancy, and other thoracic problems, and they account for the excellent results in the comparatively not uncommon cases of so called uterine asthma, which are almost always accompanied by amenorrhœa, obtained from the use of intra-uterine pessaries.

the uterus may be far smaller than usual, provided only that its canal and those of the Fallopian tubes are sufficiently developed to admit the passage of either ovum or seminal fluid. I speak decidedly on this point, for I am satisfied that conception has taken place not merely in the comparatively frequent instance of periodical leucorrhœa or colorless menstrual discharge, but even when no critical discharge whatever has been recognized.

The indication in these cases is on the one hand to stimulate the lining membrane of the uterus to its proper excretory action, and on the other to excite structural growth and increase in the several component tissues of that organ. Many of the measures by which this has been attempted have utterly failed; this is true of galvanism, however and wherever applied externally to the uterus, of all applications to the os or vaginal wall, of all attempts to produce reflex or sympathetic action by irritation of the rectum, with aloes, &c., and of the exhibition or ergot, here based upon an erroneous theory—for even if it were possible to excite uterine contraction in such cases by ergot, or I might almost add in any case unconnected with pregnancy at nearly the full period, it is not by such transient muscular efforts that we are to insure structural growth. In these cases it becomes necessary to invade the uterine cavity, and to have recourse to the means so ingeniously suggested to the profession, above all other men, by Simpson, of Edinburgh.

By the intra-uterine air-pump, the first of the two indications insisted upon may be fulfilled; I have more than once succeeded in thus inducing and keeping up the normal menstrual discharge when it had never before appeared. But this method has certain drawbacks; the instrument cannot be introduced unless there exists quite decided patency of the os, cervical canal and uterine cavity—it almost necessitates laceration of the mucous membrane, which under forcible suction must enter the open fenestræ, or even minute perforations, of the instrument, to which also it clings when this is withdrawn.

To the intra-uterine stem pessary, however, no such objections apply, and after an almost constant experience of its use for now nearly nine years, I do not hesitate to decidedly recommend it. Against this instrument very many objections have been urged; all of them, however, unfounded, provided certain precautions are taken.

The intra-uterine pessary, as I have elsewhere insisted,*

* Preface to Simpson's Obstetric Works, Amer. ed., pp. 16, 18.

For the purpose, as here, of producing intra-uterine action alone and not of remedying a displacement, it is not at all requisite that the instrument should

should perfectly fit the patient; that is, the diameter of its stem should be of such size as readily to enter both the outer and inner openings of the cervix, and its length such as not quite to touch or bear upon the fundus uteri, which can easily be decided by the previous careful use of the uterine sound. If these precautions are attended to, little fear of inducing undue irritation need be entertained.

For the treatment of the cases now under our consideration, and for the purpose of producing an additional therapeutic effect by decided galvanic action, the stem should be formed of copper and zinc, the strips of these metals being generally placed end to end; but perhaps a still better effect would be produced if they were soldered side by side. The amount of action produced in this way is shown by the fact that, upon withdrawing the instrument from the uterine cavity, while the copper portion remains almost entirely free from deposit, that of zinc is found incrusted with a thick layer of foreign matter, which upon chemical analysis resolves itself into the metallic salt usual under similar circumstances.

The effect of the galvanic intra-uterine pessary upon amenorrhœa dependent upon deficient development of the uterus, is of a threefold character; for while the mucous membrane is stimulated to its functional action, a profound impression is produced upon the deeper structures of the uterus both by the direct galvanic influence and by the action of the contained pessary as a foreign body—exciting persistent or at times interrupted muscular action for its expulsion, and thereby a general hypertrophy and increase of growth, as in the case of concealed polypi, etc.

In the third, fourth, and fifth classes of absence of the menstrual discharge that I have enumerated, the same treatment by the galvanic intra-uterine retained bougie is also indicated, and in each it is productive, in a large proportion of cases, of very decided effect. In the third variety the process of atrophy which obtains to a certain extent after ordinary parturition, is carried to an abnormal excess. The cavity of the uterus, instead of its usual size of two and a half inches, measures but an inch and a

be provided with the vaginal stem and external clasp; indeed these additions are now seldom required even for preventing displacements, except in extreme and obstinate cases. I am now constantly treating the various versions and flexions of the uterus by Hodge's excellent levers, against which I was formerly prejudiced, but now cannot laud too highly. Should, however, the double instrument of Simpson be found indispensable, I must urge the modification of it proposed by myself in 1856, (*Boston Med. & Surg. Journal, Nov.* 1856, p. 288,) by which a perfect fit to the patient may be insured.

half, an inch, or even less, and with this uterine effacement there often occurs also a cessation more or less complete of the performance of the menstrual function; the case as regards treatment being therefore rendered entirely identical with the class we have just been considering, those, namely, in which the organ has never been fully developed at all.

In some cases, again, there is apparently not the slightest organic deviation present, the ovaries seem to act in their normal manner, and yet the uterus does not respond by its usual flux. There is only wanting, as has been well suggested, a slight initiatory influence, like a touch to the pendulum, to be followed by regularity of menstrual recurrence and discharge.

In the fifth class of our series, which if but partial are generally attended by dysmenorrhœa also, there is required, in addition to mere stimulus and excitement, a certain amount of local dilatation. For this, the instrument already described may of itself at times suffice. Usually, however, I have found further measures required, relying sometimes upon the successive introduction of a graduated series of metallic bougies, and at others upon the use of expansible tents. Eight years ago, I referred to the advantages and disadvantages of sponge for this purpose,* and have found in practice the suggestion I then made, of tents self-lubricating from their own intrinsic mucilage while expanding,† to answer various important indications. As a general rule, I do not favor lateral incision of the cervix, because seldom necessary; but this treatment sometimes becomes indispensable in cases of amenorrhœa dependent upon the cause now described.

* *Boston Med. & Surg. Journal, Nov.* 1855; Simpson's Obst. Works, preface to Amer. ed., p. 16, *Sept.* 1855; this Journal, *Jan.* 1859, p. 57.

† *Association Medical Journal*, London, *May*, 1855, p. 446; *Glasgow Med. Journal, April*, 1856, p. 116.

In practice I have thus far found slippery-elm bark to afford the best material for the special indication above instanced. The sea-tangle (*Laminaria digitata*), a variety of the so-called "devil's apron," or giant rock-weed, has been suggested by Dr. Sloan, of Ayrshire, in the *Glasgow Medical Journal* for *Oct.* 1862, and since referred to by several continental writers. It is acknowledged, however, to enlarge unequally in consequence of its cellular structure, and is liable to "a bulbous expansion forming behind the stricture," as well as to "a marked increase in its length;" both of them decided disadvantages in producing dilatation of the uterus. In this connection I must acknowledge my obligation to Dr. Ephraim Cutter, of Woburn, for a communication from M. Bureau-Riofrey, of Paris, written at the request of Nelaton, containing little, however, in addition to what had already been presented by Dr. Sloan. I am at present investigating the subject, and may therefore yet find occasion to modify my unfavorable opinion. It is possible that the *L. saccharina* of our coast may prove as worthy experiment as the *digitata*, but our most common species, the *longicruris*, I do not hesitate to condemn; its hollow stem

In introducing the several instruments, to which I have alluded, within the os and canal of the cervex, certain precautions are all important. I have already spoken of the possibility of pregnancy, and of the risk in such event of unintentionally inducing abortion. The remark applied with equal force to the sound and intra-uterine bougie, whether these be applied for stimulation, dilatation, or the reduction of displacement. I am well aware of the tolerance and impunity with which at times the pregnant uterus bears such entrance, and have myself had several instances of this brought under my notice; but on the other hand, I have known, from the use of these instruments, more than one direct occurrence of the accident against which I would now guard the profession. I have already more than once referred to this matter in these pages, and have dwelt upon it at some length in my report upon the subject* rendered to the American Medical Association, in 1859; and, from much more extended experience of the true frequency of criminal abortion, I merely reiterate the opinions then expressed; their importance is rapidly becoming acknowledged.

The necessity of extreme caution in deciding upon the existence or not of pregnancy cannot be over-estimated. I speak with the more earnestness in this matter, because it is a point to which I have long given special attention. In a somewhat elaborate discussion, some years since, of the actual and relative value of the several signs of pregnancy usually recognized,† I was compelled to assert that the fœtal pulse is the only one upon which any certain reliance can be placed. This was at variance with the opinion then entertained by my friend, the late Dr. Montgomery, of Dublin, certainly the most eminent authority

collapses upon drying, and renders futile any attempt at its preparation or use. Careful examination of many other of our rock-weeds has as yet not furnished me any stems of sufficient size and tenacity for the purpose, the nearest approach to it having been in an unusually large and well-developed specimen of *Fucus vesiculosus*. It is to be regretted that there does not yet exist, as I am informed by our justly celebrated algologist, Dr. Durkee, any collection of the giant sea and rock-weeds of this vicinity. Prof. Agassiz writes me that those formerly collected by himself have been sent to his brother-in-law, Prof. Braun, Director of the Botanical Garden in Berlin, and their is no series of the character desired in the magnificent herbarium of Prof. Asa Gray, as I learn from that gentleman. A very few moments' inspection of such would at once decide as to what species alone our expectations could rationally be based upon.

* Transactions of the Amer. Med. Association, vol. xii, 1859, p. 75; *North Am. Med.-Chir. Review, Jan.* to *Nov.* 1859; Treatise on Criminal Abortion in America, Philadelphia, 1859, p. 70.

† Review of Montgomery's Signs of Pregnancy, *North Am. Med.-Chir. Rev., March*, 1857, p. 249.

upon this subject; shortly previous to his death, however, Dr. Montgomery wrote me that he both accepted and indorsed the limitation I had made.

Pregnancy being assuredly absent, it is only requisite to bear in mind the fact that as in other strictures, of the male urethra, for instance, spasmodic action often suddenly ceases upon long-continued gentle pressure, and allows the entrance of the instrument; and that in the frequent instance of complication with uterine displacement, it is at times necessary slightly to push up the fundus uteri, and so straighten that organ before such entrance can be effected. The cases where, the uterus and ovaries being perfectly normal, there yet exists obstruction or occlusion of the Fallopian tubes, from the extension of general peritonitic inflammation or otherwise, are still beyond all operative aid, despite Tyler Smith's ingenious but impracticable proposal of tubal catheterization. In such instances, a menstrual discharge may or may not regularly take place; if both tubes, however, are closed, the escape of ova or passage of semen, and consequent conception, are manifestly impossible. In these cases the possibility of peri-uterine hæmatocele, from ovarian hemorrhage attending an attempt at ovulation, must be borne in mind.

There remain but three more classes of amenorrhœa remediable by the surgeon. Of these, one, the sixth in our enumeration, where there is complete occlusion, congenital or acquired, of the generative canal, has been amply treated of by many surgical and obstetric writers. One single point regarding it has, however, been almost universally lost sight of, the liability, namely, in these cases, after so remarkably simple an operation, to a fatal result; yet the explanation of this is very simple, and its indication in practice equally plain.

A small incision, which is generally made through fear of occasioning collapse, should the uterus be suddenly emptied, is almost sure, in consequence of the thick and inspissated condition of the fluid usual in retained menses, to occasion powerful uterine contractions after the flow has once begun; just as these take place after labor, from the presence of clots, shreds of membrane, etc., foreign to the uterine cavity. During these contractions, the natural outlet being still impeded, there is no doubt that at times a portion of the retained fluid is forced backward through the Fallopian tubes into the cavity of the abdomen, giving rise to fatal peritonitis. By a free incision of the obstruction, therefore, whenever existing, the uterus should be emptied as rapidly and as thoroughly as possible, even to the extent of completely rinsing its cavity by gentle injections of

lukewarm water or soapsuds, and subsequent compression through the abdominal walls, as in a case in which, nearly ten years ago, I assisted my friend, Dr. Malcolm, of Edinburgh.

Previous to this operation, and I am daily more and more inclined to extend the precaution to all that involve the pelvic viscera, it is well to have recourse to the preparatory treatment recommended by Clay, of Manchester, in cases of ovariotomy, giving doses of ox-gall for several days. I am also in the habit, from the analogies obtaining alike in origin, progress, and result, between erysipelas, puerperal and surgical fever, and peritonitis, of depending somewhat upon the preparatory administration of muriate of iron.

The next cause that awaits us is where there exist certain general organic lesions of the uterus itself, its walls or their lining membrane. These affections as causing amenorrhœa are few, hyperæmia of the mucous membrane and menorrhagia being here the rule, and can only be ascertained under dilatation by expansible tents, which may unexpectedly reveal, as it has not unfrequently done, the retained remains of some long past or forgotten conception. It is in the former of these cases, especially where following an attack of metritis, that we find the best results from a direct application to the lining membrane of the uterine cavity, either of nitrate of silver and other stimulants in substance, or in solution, by a sponge. This of course must be done by the aid of instruments specially constructed for the purpose;* and I would suggest that from galvanism thus locally applied by wired sponge through a long and curved canula, as has lately been done in the case of the female bladder,

* I have long been in the habit of using for this purpose an instrument similar to that proposed by Lallemand for the male urethra, but have always been dissatisfied with its size, its complexity, and in recommending it to my friends, its comparatively great cost; the lower portion both of the sheath and the contained stem being necessarily of platinum. Of late, however, I have used an implement of much more simple construction, for the suggestion of which I am indebted to my friend, Dr. Mack, of St. Catharine's, C.W., who seems to have been the first to apply it in practice, although a form closely similar has lately been proposed by Dr. Lente, of New York, (*Amer. Med. Times*, *Sept.* 26, 1863.) Dr. Mack uses a bullet-probe, coated at its tip with a caustic bead, obtained by dipping the slightly heated point of the probe in fused nitrate of silver. To render the instrument more convenient for constant use, I have supplanted the pincers and slide in the usual closed and jointed caustic holder for the pocket, by a stout platinum wire, probe-pointed, which can be easily kept armed with the nitrate, and will be found upon trial to answer a most admirable purpose; the probe may here be made movable, and inserted within the grasp of the stationary forceps when required; at other times being kept in the hollow space of the handle. The instrument thus constructed answers a double purpose, and Messrs. Codman & Shurtleff, instrument makers, of Boston, are now prepared to supply it to the profession.

a much better effect would be obtained than from any other mode in which it has been applied for amenorrhœa. I would decidedly condemn the use of every kind of intra-uterine injection, for whatever purpose indicated, unless, as I have said, to cleanse the cavity after the operation for retained menses; since they are much less easily controlled in action and, for other reasons, are attended with infinitely more hazard.

The last of the divisions described, those depending upon ovarian inflammation, as in many cases of so-called spurious pregnancy, or upon general organic or functional disturbance, would at first sight seem evidently within the domain of strictly medical treatment. On the contrary, it is by a direct appeal to the uterus itself by one or other of the methods to which we have so often alluded, that we must sometimes combat the existing lesion or functional abberration; in many cases of incipient phthisis, for instance, where there has been no vicarious hemorrhagic discharge, and consequently no error of diagnosis, the disease has thus been warded off, or if already developed, stayed. Any excessive or abnormal flux should of course be met by every means in our power, but these means are often utterly inefficient unless accompanied by treatment directed to the uterus itself; thus diabetes and hæmaturia, leucorrhœa and hæmorrhoids, chronic dysentery, salivation and galactorrhœa, may all, while explaining the existence of amenorrhœa, themselves be kept up by the very quiescence of the uterus; so that, paradoxical as it may seem, to remove the cause it is here also necessary to remove its effect.

To the classes I have now enumerated I must add one other, none the less interesting from its rarity; the instances, namely, where the ovaries are absent, either congenitally or by operation, though the uterus is present. In the latter instance, the case at once declares itself by its history; in the former it is generally only after a long study that the diagnosis can finally be reached. As to treatment, we can only content ourselves with that recommended for absence of the uterus, to combat any general or local plethora that may exist, and for the rest patiently to withhold the hand.

LATENT SYPHILIS.

In reply to an inquiry addressed to medical practitioners in all countries "On the influence which an Anti-Syphilitic Mercurial Treatment of Parents has on the Health of their Child-

ren," Hebra draws certain deductions from ten cases occurring in his private practice, among which conclusions we find the following: "Syphilis may remain latent in the body, without discovering itself by any symptoms, and first betray itself by the syphilitic affection of the children."--(*Year-book of Surgery*, 1860, p.322.) By which is meant, that a man may contract syphilis, and fancy himself well, and yet after marriage, at some distant period, while in apparently perfect health, beget children, who may become the subject of the syphilitic taint in a constitutional form. The great difficulty in obtaining perfectly reliable information on these questions from patients must be admitted by all, but still, with care, we may arrive at a close approximation of the truth.

Hebra states a fact which has been recognized by many in the surgical practice at St. Bartholomew's Hospital for a long period. The two following cases, which came under Mr. Coote's care on August 15, 1863, illustrate, he considers, Hebra's views:—

Case 1.—Jane M., aged 27, a healthy looking young woman, married three years, came to the hospital bringing an infant covered from head to foot with syphilitic psoriasis. She said that the eruption showed itself a few days after birth, and the child had since pined and become emaciated. She added that she had one other child about eighteen months previous, which was born dead. The closest inquiries were made as regarded both her own health and that of her husband. She replied readily and frankly, with a full knowledge of the purpose of the question, and assured us that no illness had shown itself on either herself or her husband in any way during their married life. The child was ordered two grains and a half of mercury and chalk twice a day, and is going on favorably.

Case 2.—Elizabeth A., aged 16, a slightly made, pallid child, living with her parents, came to the hospital with a circular and perforating phagedænic ulcer of the soft palate, the size of a sixpence, with tawny surface and inflamed circumference. There were adhesions of the left iris around the pupilary margin, but no indications of recent iritis. She was questioned with care, consideration being of course shown to her youth, and it was obvious that she was innocent of any irregularity. It was also denied that either parent had ever suffered from syphilitic disease during married life. The edges of the ulcer were touched with nitric acid diluted with five parts of water. She was ordered three grains of iodide of potassium in sarsaparilla. The case is going on well.

Hebra adds that the reverse may happen, viz., fathers infected with general syphilis may neither infect their wives nor produce syphilitic children. In illustration of this statement I mention the following case:—

Case 3.—Thomas W., 38, a respectable man, contracted syphilis twelve years ago, and only on that occasion. He had an indurated chancre at the reflection of the prepuce on the glans penis. It was treated with mercury and disappeared, and the man remanied well for two years, when he became the subject of syphilitic lepra, chiefly affecting the arms, chest, and head. In course of time the eruption disappeared, and seven years ago he married. His wife and children are in good health, but he is subject to syphilitic ulceration of the tongue and fauces, and to occasional attacks of lepra in a slight form.—*Med. Times and Gaz., Sept.* 15, 1863.

VARICOCELE OF TWELVE YEARS' DURATION; GREAT PAIN IN THE TESTICLE; OPERATION BY WIRE LIGATURE; CURE.—

H. G., æt. 24, a butcher, was admitted into Westminster Hospital, under the care of Mr. B. Holt, April 16, 1863, suffering from varicocele of twelve years' duration. He states that for many years he has been accustomed to ride for several hours a day, and frequently without a saddle; that he does not remember to have met with any accident, but that his business required him to stand for a considerable period of the day; that he always felt weak, but has not been laid up with any serious illness. Twelve years since he complained of pain in his left testicle, which was increased upon exertion, and occasionally was very severe at night. He consulted a surgeon who advised him to wear a suspensory bandage; but although he had continued to do so, the pain in the testicle had latterly so much increased as to compel him to abandon his work. Upon examination, the usual tortuous and congested condition of the veins was detected behind the testicle, which, however, could be emptied by placing him in a horizontal position; but when pressure was applied over the external abdominal ring, and the patient was desired to resume the perpendicular, the veins were more swollen than before. The vas deferens could be easily isolated.

Mr. Holt determined to tie the veins with the wire suture by the subcutaneous method; and the patient being placed under

the influence of chloroform, and the vas deferens isolated, a needle armed with the wire ligature was passed through the scrotum behind the diseased veins, and made to perforate the scrotum on the inner side. The needle was now made to enter at the same opening, and the wire was passed in front of the veins, and so out at the first puncture; thus no skin was included in the wire loop, but merely the veins and some areolar tissue. The wire was now twisted, and the same proceeding was adopted a little lower down, by which the veins were thoroughly included in two ligatures. The wires were now shortened, the intention being to subject the veins to compression for three or four days, and then to remove them by simply untwisting them. For the next three days the patient was comfortable, and did not complain of pain. There was slight swelling, and tenderness when the part was touched, but no other pain. On the fourth day Mr. Holt intended untwisting the wires as before described; but the twisted portion was so deeply imbedded that he determined to cut both ends short, and leave them as permanent compressors. The punctures healed in two days, and the wires remained, not exciting any irritation or disturbance, and the patient was able to work without inconvenience. He was detained in the hospital for a fortnight that Mr. Holt might see whether any inconvenience was experienced; but none having occurred at the expiration of that time, he was discharged, but requested to present himself from time to time that the result might be watched. The veins between the ligatures were entirely obliterated, and the patient described himself as perfectly free from any pain in the testicle. He has presented himself occasionally as requested. The wires can be felt, but they do not occasion any inconvenience, and he has resumed his work with a perfect immunity from pain.

Mr. Holt remarked that this was a case from which probably some instruction might be derived. He stated it was not his intention, in the first instance, to have left the wires around the veins; but as there was some little difficulty in their removal, he determined to retain them, as in all probability they would not excite irritation, and they would positively prevent any recurrence of the disease. He considered it was a practice that might be repeated with advantage. The pain of the operation was merely that which resulted from the two punctures in the skin, and the patient had not otherwise suffered, as was almost always the case when any portion of the integument was subjected to pressure. The operation was in itself of the easiest possible kind to perform, and he did not consider the patient

need be confined to bed. Should future cases be attended with a like favorable issue, the proceeding would become general, and the pain and time of the patients be considerably abridged, while the question of recurrence would be entirely set at rest, such an occurrence being impossible so long as the wires acted as compressers.—*Lancet, Aug.* 16, 1863.

Editorial.

SMALL-POX HOSPITAL.

As many of our readers may have seen alarming accounts of the prevalence of Small-Pox in this City, in the daily papers, and still more alarming accounts of the condition of the Pest-House or Small-Pox Hospital, we copy the following report of the condition of this institution, made by Dr. BARTLETT to the Chicago Medical Society a short time since. The report is perfectly accurate in its statements, and furnishes a good illustration of the inadequate attention generally paid to the most important Sanitary matters, by the Municipal Authorities of some of our large cities.

There is really no more cause for alarm concerning the prevalence of Small-Pox in the city now than there has been at any time during the last four months. When our Legislative and Municipal Authorities will adopt efficient and compulsory measures for having every child vaccinated before it is two years old, and re-vaccinated between the ages of fifteen and twenty years, Small-Pox will be essentially expelled from the community, but not until then.

Dr. BARTLETT'S report is as follows:—

Mr. PRESIDENT.—The committee appointed at the last meeting of this society, to investigate the condition and management of the City Pest House, report as follows:—

"The Pest House was established in October, 1862. Dr. L. P. Cheney is physician to the institution, and Mr. C. S. Perry is the directing officer. It is situated near North Ave., between Clark Street and the lake. The site is unobjectionable, except

that the potter's field lies within twenty rods of it. The building is an old one-story frame, fourteen feet wide and sixty-eight feet long, having a small L at the westerly end. The main part of the house is divided into four rooms, communicating with one another, each fourteen by seventeen feet. The L is divided into two very small and low rooms for the nurses. The westerly room is the kitchen, the three others are wards. Each is lighted by two windows, placed opposite one another in the north and south walls. Two of them have outside doors. These three rooms have an air-space of 6,426 cubic feet. Means of warming the house seemed ample, though no instruments are used to regulate the temperature. The floors gave evidence of recent scrubbing; but in places they were foul with spittle and expectoration. There were no spittoons; the sputa of the bad cases were received in chamber-pots, each of which contained urine. The walls were black and dirty.

The windows were all closed. The outside doors of the second and third rooms stood ajar, and there was an open pane in the window of the first ward. Drafts of air were admitted, which might be deemed to be as unsafe to some of the patients as they were salutary to others. No proper means for permanent ventilation exist. The atmosphere of the rooms was not, at that time, more offensive than a badly regulated hospital for ordinary diseases. The peculiar odor of small-pox was not perceptible, except in the immediate vicinity of the worse cases. No disinfecting agents are employed.

In the female ward there were six beds; in the second room, seven; and in the third, six. For bedsteads, army-cots are used; upon these single mattresses are placed. The bedclothes consist of cotton quilts only. Some of the patients lay on mattresses, nearly all had one or more comforters under them. There were, with one or two exceptions, no sheets or pillow-cases used; though the Health Officer stated that a quantity of these articles were on hand. The beds and bedding appeared very filthy, and there is reason to believe they were so. The quilts are aired, but never washed. After bad cases, the mattresses are burned; commonly, they are filled with new straw. Several badly soiled cots and mattresses were observed in the yard, which, it is presumed, were to be used after airing.

There is but little hospital clothing for patients.

There are no screens for the dying. There were in all twenty-five patients—eighteen males, five females, and two children. Four were dangerously sick, nine were progressing favorably, and twelve were convalescent. The cleanliness of the patients

seemed to be entirely neglected. The medical attendanr stated that, not so much as their faces were regularly washed, and this was done only when they were uncommonly filthy from effusions of blood or matter. Your committee saw much to confirm this statement. Sometimes the physician has had occasion to reprove the nurses for delay or neglect in removing the excretions of bad cases, but generally there has been no ground for complaint. One case of serious delinquency on the part of the dresser fell under observation.

The convalescents are allowed the liberty of the house. The second ward has an air-space of about 2,142 cubic feet. This is less than the minimum space set apart in well-regulated hospitals for *two* patients. Beside the seven patients belonging in this room, there were, at the time of the visit, four convalescents. Six of these men were negroes.

The clothes of persons entering the hospital are put out to air. No patient is allowed to go out without a written discharge from the physician.

No opportunity was had to ascertain the diet of the patients. There is no diet table.

The kitchen was perfectly neat, and the larder not wanting in good, substantial articles of food. It was stated that any diet could be procured commonly used in hospitals.

Two women and one man, with the assistance of convalescents, discharge all the duties of the house. The physician visits the hospital as occasion requires, usually once daily. The treatment employed by him does not materially differ from that generally adopted. In mild cases he pursues the expectant course. He allays undue excitement in the beginning with antimonials. When the secondary fever assumes a low form, or if exhaustion from any other cause threatens, strength is sustained by strong broths and quinine. Occasionally alcoholic stimulants are necessary, but they are not thought so generally applicable as preparations of bark. Dr. Cheeney attaches great importance to securing sleep. With him, opium is a favorite medicine throughout the disease.

The sarracenia purpurea has not been tried. The sulphite of soda has been used with some apparent advantage.

Of late, no applications have been made to prevent pitting. Dr. Cheney has not found those means, the use of which seemed practicable under the circumstances, to be of much benefit. He stated, however, his intention to put in use other new methods from which he anticipated success. The rooms are kept darkened and, as a rule, there is no pitting.

The mortality has been very slight. Since the establishment of the hospital, 199 have been treated. Of these 36 died—a death-rate of a little over eighteen per cent. Dr. Cheney may very well congratulate himself upon so favorable a record, especially when the disadvantages under which he has labored are duly considered.

On the day of the visit of your committee, a new ward was being opened. It forms an L with the east end of the main building. It is 17 by 18 feet, with a height of ceiling of 7 feet 6 inches. Two small half windows on either side will be the only means of ventilation.

In conclusion, your committee would state that every facility for obtaining the desired information has been courteously afforded them by the physician in attendance. The Health Officer also gave his assistance.

On motion the report was adopted.

UNITED STATES SANITARY COMMISSION.

To His Excellency the President of the United States:

Sir:—The United States Sanitary Commission, authorized by the Government to act as a Commission of Inquiry and Advice in respect to the sanitary interests of the national forces, have been for more than two years and a half close and careful students of the medical and hygienic affairs of the army. They ought to be, they are thought by the people of the United States to be, they claim to be, better acquainted with the working of the Medical Department, whose deficiencies, mistakes, and necessities, it is their solemn duty to discover and obviate, than any other responsible body of witnesses. Trusting in their discretion, zeal, and works, the people of the loyal States have made them their almoners, to the extent of seven millions of dollars' worth of sanitary stores, and a million of dollars in money. The disbursement of this immense charity has brought our agents into close and continual contact with the Medical Department, to whose steady and rapid improvement from the imperfect state in which we found it, to its present degree of surprising and gratifying efficiency, we are able to lend a most indisputable testimony. We attribute this immense improvement to the fact that for two years the Medical Department has been directed by Dr. W. A. Hammond, Surgeon-General, a man known to all impartial and competent judges, as thoroughly scientific, highly endowed, large-minded, and an energetic and controlling administrator. He was selected for his office solely

for fitness, and in our calm and deliberate judgment, his administration has more than justified all the high hopes and expectations of those who recommended him for the place.

We hear from sources that do not permit us to doubt the fact, that cautious but systematic efforts are now making to remove Surgeon-General Hammond from office. In the name of some millions of constituents, in the name of the homes of this country, whose solicitude, liberality, and watchfulness we represent, we respectfully and conscientiously protest against the secret tribunal, and the indirect methods by which the good fame of the Surgeon-General has been already seriously, and we believe unjustly, aspersed. We protest in our character of experts, a body whose business it has been made to inquire and advise on this very subject, that the removal of Dr. Hammond would be as serious a blow at the lives, comfort, and efficiency of the army as the enemy itself could inflict; that the science of the country, the humanity of its homes, and the army itself, would resent it as a cruel wrong and an alarming error; and we feel ourselves bound, in the interests of the soldiers in the field, and of those about to enter the service of the country, in defense of our own principles and convictions, and in the name of the science, the charity, and the fair-mindedness of the nation, to beg that no further steps in this direction may be taken, without a full and fair trial of Surgeon-General Hammond upon the charges alleged to have been secretly made against him.

December 29, 1863.

Signed { H. W. Bellows, Wm. H. Van Buren, Wolcott Gibbs, Geo. T. Strong, C. R. Agnew,

Standing Committee U. S. Sanitary Commission.

We copy the above very singular document from one of our exchanges. It is singular or remarkable in several particulars. First, on account of the *assumed* dignity, importance, and representative character of those whose names are signed to it. For they not only "*claim to be* better acquainted with the working of the Medical Department of the Army" than any one else, but, also, to be the representatives of "some millions of constituents," together with the "*science* of the country and the *humanity* of its homes."

Second, on account of the assumption that all the improve-

ments and progress made in the Medical Department of the United States army are due "to the fact that for two years the Medical Department has been directed by Dr. W. A. Hammond, Surgeon-General." According to this body of men, representing "some millions of constituents," &c., all the hard-working, self-denying members of the medical staff of the United States army have been but simple clay in the hands of the "thoroughly scientific, highly endowed, large-minded, and energetic" Surgeon-General. And so destitute is the whole Staff of both brains and science, that not a man in it could be found qualified to fill the position of Surgeon-General, and consequently the removal of Dr. Hammond "would be as serious a blow at the lives, comfort, and efficiency of the army as the enemy itself could inflict." Alas! what if the Surgeon-General should die!

Third, it is most remarkable of all, on account of the demand for a court to try Dr. Hammond, after they, in their character as "*experts*," have fully pre-judged his case, by declaring that "his administration has *more* than justified all the high hopes and expectations of those who recommended him for the place."

Now, we are heartily tired and nauseated with such arrogant bombast and pretension as is put forth in the above document. We do not know what charges have been preferred against Dr. Hammond, as Surgeon-General; and we sincerely hope that they will be fairly and fully investigated, and for the credit of the profession to which he belongs, that they will be wholly disproved. But we certainly have no idea that all the science, the humanity, and the energy of the Medical Department of the Army is centered in him; or that his removal would endanger the dissolution of the Army. On the contrary, we believe the Medical Staff of the army contains a score of men, any one of whom are quite as competent to fill the office of Surgeon-General as is Dr. W. A. Hammond.

If Dr. Hammond is a man of such remarkable endowments, and peculiar fitness for the post of Surgeon-General, we would respectfully ask the above committee of "experts" why it is that after two years of his administration there is not yet an

efficient ambulance system for attending properly to the wounded in battle; and why the thousands of sick and wounded in all departments of the army are still pensioners on the *charity* of the nation, instead of having all their legitimate wants supplied promptly through the regular and responsible officers of the Medical and Commissary Departments? Is it any credit to the Government, or proof of efficiency on the part of the Secretary of War and Surgeon-General, to have the army so managed that no less than $7,000,000 or $8,000,000 of gratuitous and charitable donations have been required from the people to keep the sick and wounded soldiers from unnecessary suffering? Finally, is it the proper business of a *Sanitary Commission* to dispense *charity*, or to investigate and expose those causes that injure the health of the army, and the most reliable means for avoiding them?

The Medical Staff of England.—From the last census it appears that there are, in England and Wales, one surgeon or general practitioner to about 1,712 of the population, one physician to 5,552, and one dentist to 3,505.

ON THE VALUE OF TINCTURE OF IODINE AS A TEST FOR DIABETIC URINE.

(*To the Editor of The Lancet.*)

Sir:—Having a case of diabetes mellitus under my care, and wishing to ascertain the value of the recently discovered test of Trousseau and Dumontpallier, I performed the following experiment:—

Equal quantities of healthy and diabetic urine were placed in two test-tubes (sugar having been ascertained to be absent from the former specimen). I then added to each fifteen drops of tincture of iodine. The effect was to tinge the healthy urine of a rose color, which it retained; while in the diabetic specimen all trace of color was promptly removed, showing the presence of glucose.

The test is very convenient, as well as very striking to the eye when compared with a healthy specimen. It is also very delicate, as I found by diluting the urine with water until I reached a specific gravity of less than 1001. In the latter experiment all color was removed, but it took a longer time.

The presence of rhubarb has appeared to me to interfere with Luton's test (bichromate of potash and sulphuric acid); but it produces no such effect upon the iodine test.

Should the value of this test be further confirmed, it will be found more ready and convenient than any of the means hitherto employed for the detection of sugar in the urine.

I am, Sir, your obedient servant,

H. D. Massy, Staff Assist.-Surg.

LETTER FROM NEW YORK.

THE NEW (OR OLD) ANÆSTHETIC.

Editor Medical and Surgical Reporter:

Sir:—Being informed that you take an interest in the question as to whom the honor belongs of having discovered and made practical anæsthesia, I ask leave to bring to your notice some facts within my own knowledge, which would seem to conclude the whole matter.

No one, I think, who has taken pains to examine the evidence on the subject, can doubt that the honor of the discovery belongs to the late Dr. Horace Wells, of Hartford, Connecticut. He made his discovery at one of my "exhibitions" of the "nitrous oxide gas," in the city of Hartford, on the evening of the 10th of December, 1844, and the next day he brought that discovery to the test of an experiment on himself. I, at his request, administered to him the gas, and Dr. Biggs, a dentist, extracted one of his large molar teeth without the slightest pain. The success of the operation surprised us all. This was, no doubt, the first successful trial of an adequate anæsthetic agent, and led to all that has since followed in this beneficent line of effort.

He attempted to establish the truth and value of his discovery in Boston, soon after, calling on Dr. Jackson, Dr. Morton and many Dentists of that city. These facts are established by an elaborate and unanimous report on the question "who discovered anæsthesia," made to the New York Legislature at the session of 1860, by the Medical Society of that State. This report contains an exhaustive consideration of the claims of Wells, Jackson and Morton, arriving at the conclusion that to Wells alone belongs the honor of the discovery. The facts are also established by many depositions, gathered and published in a volume on "anæsthesia," prepared by the Hon. Truman Smith. By these depositions Mr. Smith shows that Dr. Wells was in the constant and successful use of the nitrous oxide gas as an anæsthetic, in the city of Hartford, during nearly the

whole of 1845. He occasionally used ether, but preferred the nitrous oxide for a brief operation, like the extraction of teeth. During this time the subject of anæsthesia had not obtained any hold on the public mind, except in the city of Hartford. The discoverer encountered almost insuperable incredulity. It could not be believed that *any* substance could be breathed so as to destroy pain in surgical operations! Surgeons and the medical profession treated the subject as chimerical. It is no wonder that Dr. Wells, (a dentist,) made very slow progress in the introduction of his new discovery.

In December, 1845, Dr. Wells went to Europe to bring out his new invention, during his absence Drs. Jackson and Morton commenced a series of experiments with ether, to determine what there was in this discovery; their experiments proved successful; their next step was to secure a patent, which they applied for in the month of *November*, 1846, nearly two years after Wells made and demonstrated his discovery. Before it was issued, Jackson assigned his interest in the patent to Morton, therefore the patent was issued in the name of Morton. This, be it remembered, was all done in the absence of Wells. On the return of Wells to this country a discussion commenced between him and Morton as to the origin of the discovery, during which Wells died, leaving a widow in indigent circumstances with no means to prosecute the matter, consequently Morton had the field clear to tell his own story. By the disinterested and unpaid labors of the Hon. Truman Smith the testimony was gathered which establishes beyond cavil the truth of the above statements.

At the time of the death of Wells, very few people, aside from eye-witnesses, had any faith in either nitrous oxide or ether as an anæsthetic. After this event the nitrous oxide was superceded by the use of ether, so far as any anæsthetic was used. Ether could be purchased at any drug store, while it required expensive apparatus and some chemical knowledge to make the nitrous oxide, so that for twenty years past the nitrous oxide has hardly been thought of as an anæsthetic, till I revived it in May last, in New Haven, Connecticut. I there announced that I believed the nitrous oxide was a safe and efficient anæsthetic for the extraction of teeth, and on account of its harmlessness, was far superior to ether or chloroform. I arranged with Dr. Smith to extract teeth by this new (or old) anæsthetic, and in the space of three weeks and two days we extracted *over eight thousand teeth*, and without any pain to the patients. I then came to New York and established the "Colton Dental Associ-

ation," and have administered the gas, up to the present time, for the extraction of about eight thousand teeth. We find it works with far more certainty and uniformity than ether or chloroform, for we have never yet found a patient whom we could not put into a profound sleep. In no instance has any injurious effect attended the operation. We have given it to persons suffering from almost all sorts of disease, nervous debility and weakness, and heart disease, including many cases of far gone consumption, with no ill effects. In no instance have patients complained of pain. In a very few cases, where a large number of teeth have been extracted at a sitting, and several doses had to be given, a little blood would be swallowed and nausea would result. With these rare exceptions, not the slightest unpleasant effects have followed.

We have never had a patient who had previously taken ether or chloroform that did not warmly express his preference for nitrous oxide. Hundreds of dentists, who were, at first, skeptical about the nitrous oxide *on seeing its operation*, have given it their warmest commendation, and I do not now know of *one* in New York, who does not prefer it to ether or chloroform. The opinion on this subject, so far as I have been able to learn, is universal, and a large number send us their patients requiring the extraction of teeth.

I think these facts ought to satisfy the medical, also the profession and public, that for a brief surgical operation, the nitrous oxide gas is the best anæsthetic known. I have no doubt that if desired, I could keep the patient in an anæsthetic state for fifteen minutes or more. Instead of producing anæsthesia by depressing the vital forces, and diminishing the circulation of the blood in fact, approaching the point of death, the gas produces anæsthesia from the very opposite cause, from *over exhilaration*, and from an increased and more highly oxygenized condition of the blood. A small dose of nitrous oxide or ether or chloroform will exhilirate, a larger induces sleep. But ether and chloroform act directly on the nerves, and as a *stimulant*. A consequent reaction and depression follows. The nitrous oxide is not a stimulant, and does not act directly on the nerves at all. The gas is taken into the lungs and is rapidly absorbed by the blood, producing a highly oxygenized condition of that fluid. This highly purified blood acts as an *exhilarant* on the nerves. (There is a wide difference between an exhilarant and a stimulant.) The anæsthetia is produced by *over exhilaration*. There is no reaction or depression following its inhalation. When I say this, I but reiterate what all works

on chemistry state. I speak also from an experience of twenty years with the gas.

I call nitrous oxide the new anæsthetic, because I have after a long interval, revived the use of it. But it is in fact the old anæsthetic of Horace Wells, and I rejoice that Providence has permitted me to live and demonstrate the truth and validity of his great discovery. Surgeons, physicians, and dentists from any part of the country who may desire to verify the truth of the above representations, are invited to call and witness the operations at the rooms of the Colton Dental Association, 22 Bond street, New York.

Respectfully, G. Q. Colton.

Chicago Medical Journal.—We see by the January number of this monthly, that it has again changed hands.

Professors Brainard and Allen, its former editors and proprietors, have transferred it to Professors Miller and Ingalls, of the same faculty. We congratulate its readers on this change, for if its future editorial articles should be less facetious and spicy, they will doubtless be more truthful. We welcome the new editors as co-laborers in the field of medical journalism.

GLYCERINE.

This may appear at first sight an almost exhausted subject; but the uses of glycerine in medicine and surgery are so numerous that there are still many points worthy of notice.

The therapeutic uses of glycerine may be said to have begun with its employment in cases of deafness by Mr. Thos. Wakley, in 1849. Mr. Startin had, we believe, used it to some extent previously in skin diseases; but its value in aural surgery led directly to the recognition of its peculiar properties, and their adaptation to many practical requirements. It happened, fortunately, that shortly after the publication of Mr. Wakley's work a method was discovered of preparing glycerine perfectly pure. The whole range of pharmacy supplies no more striking illustration of the supreme importance of absolute purity in our remedial agents. So long as we were unable to obtain a pure glycerine, it was impossible to ascertain its real merits as a remedy. This desideratum was supplied by the industry and scientific skill of Mr. G. F. Wilson, the well known manager of Price's Candle Company. That manufactory, in his hands, has

in a most remarkable manner demonstrated that scientific discoveries which at first sight appear quite useless or remote from any practical application may become of the greatest value in the common affairs of life. When chemists read with admiration the researches of Chevreul on fatty bodies, about forty years ago, they could scarcely have dreamed of the results to commerce and medicine which would flow from them. We doubt, indeed, whether even yet physiologists have duly appreciated them and their bearings on the function of fat in the living economy. When Mr. Wilson directed his attention to glycerine as a product of the operations on fats in candle making, it was a useless waste material, and hundreds of tons were thrown away annually. At that time we could only employ an impure fluid scarcely affording a glimpse of its real properties. The early attempts to employ glycerine gave rise to contradictory and conflicting opinions. This arose simply from the various matters attaching to it, from its mode of preparation, and the sources whence it was derived. It had a disagreeable odor from the presence of volatile fatty acids, and often contained lime, lead, and other metals, or metallic salts, sulphuric acid, hydrochloric acid, and alkaline or earthy salts. No wonder that it was found to irritate inflamed surfaces and to aggravate painful states—effects directly opposite to those of pure glycerine. As it is said there is still impure and adulterated glycerine in the shops, it is of primary importance to recognise the pure.

Glycerine should be absolutely without smell or color, with a saccharine taste, and of the consistence of syrup. Its chemical formula is $C^6 H^7 O^5$, H O. With a specific gravity, at 60° F., of 1.24, it contains 94 per cent. of anhydrous glycerine. It can be concentrated to 1.26, when it contains 98 per cent. It is soluble in all proportions in water and alcohol, but insoluble in ether. It should show no reaction with litmus paper, and yield no precipitate with any reagent. Such is the glycerine prepared by Mr. Wilson, and known as Price's. Its source is palm oil, from which it is prepared by distillation in steam at a temperature of from 550° to 600° F. It is a curious fact, that although thus separated from its natural combination with fixed fatty acids, it will not again combine with them. Attempts to form preparations by combining glycerine with solid fats or oils are false in principle. Its combination with starch in various proportions, as described by Dr. Tilt, is the form in which it is best adapted for use; and it appears probable that this will in a great measure supersede all other ointments, whilst its solvent

power renders it a most suitable vehicle for substances designed to be used with some friction on the surface as liniments and embrocations.

Unlike oils and fat, it does not absorb oxygen, and therefore never becomes rancid, or decomposes substances dissolved in it. It is probably mainly by virtue of this property that it acts as an antiseptic. Applied alone, it soothes the irritation of most skin diseases, and allays the pain of inflamed parts. With the exception of the formula for the use of starch to render it semi-solid, as given by Dr. Tilt, we see no advantage in copying the various formulæ which have been published. Every one can describe the remedy he selects according to its known properties, if the quantity soluble in the glycerine is known. Hence, we conceive the following tables will be found very useful:—

A. *Inorganic substances.*

100 parts of pure glycerine dissolve—

Sulphur	0-1	Cyanide of mercury	27-0
Phosphorus	0-2	Arsenic acid	20-0
Iodine	1-0	Arsenious acid	20-0
Bromine	(all proportions)	Boracic acid	10-0
Monosulphuret of potassium	(all proportions)	Chlorate of potash	3-5
" of sodium "		Arseniate of "	50-0
" of lime "		" of soda	50-0
Persulphuret of potassium	25-0	Carbonate of "	98-0
Iodide of sulphur	1-6	Bicarbonate of "	8-0
" potassium	40-0	Borate	60-0
" zinc	40-0	Carbonate of ammonia	20-0
Biniodide of mercury	0-3	Hydrochlorate of "	20-0
Bromide of potassium	25-0	Alum	40-0
Iodide of iron	(all proportions)	Sulphate of iron	25-0
Chloride of sodium	20-0	" zinc	35-0
" barium	10-0	" copper	30-0
" zinc	50-0	Nitrate of silver	(all proportions)
" iron	(all proportions)	Tannic acid	50-0
Bichloride of mercury	7-5	Oxalic acid	15-0
Cyanide of potassium	32-0	Benzonic acid	10-0

With the sulphuric, nitric, phosphoric, hydrochloric, acetic, citric, and tartaric acids, glycerine unites in all proportions; and the same with the caustic alkalies and some salts, as the hypochlorites of soda and potass. Most of the metallic salts soluble in water are to about the same degree soluble in glyce-

rine; some, however, are decomposed, as the bichromate and permanganate of potass.

B. *Organic substances, alkaloids, &c.*

100 parts of glycerine dissolve—

Morphia	0-45	Quinine	0-5
Muriate of morphia	20-0	Sulphate of quinine	2-75
Atropine	3-0	Cinchonine	1-5
Sulphate of atropine	33-0	Veratrine	1-0
Strychnine	0-25	Brucine	2-25
Sulphate of strychnine	22-5	Codeine	(all proportions)
Nitrate of strychnine	4-0		

Watery extractions of vegetables are very soluble in glycerine; whilst gums, resins, essential oils, ethereal extracts, camphor, balsams, fatty acids, are either wholly insoluble or sparingly soluble.

The internal uses of glycerine, either alone or in combination, or as a vehicle for active substances, await further investigation.

Notwithstanding that we are told the quantity of glycerine used in the hospitals of Paris increased from 300 pounds in 1851 to 3000 in 1861, we fear the demand for glycerine for therapeutic purposes will fall very far short of the amount produced as a residue in candle making, when this is reckoned at hundreds of tons per annum. That the demand for it will greatly increase as its value becomes recognised there is no doubt. If the price could be considerably reduced, the consumption would be much larger.

Hæmostasis.—At the last meeting of the British Association in Newcastle, a paper was read by Dr. Junod, so well known as the inventor and improver of an apparatus for the purpose of producing a vacuum over certain portions of the body. By this instrument, as is now well known, the power is afforded of withdrawing rapidly into a given part of the body from the general circulation from six to ten pounds of blood, and to maintain this important displacement as long as the case requires. Thus the most important effects of venesection may be produced without the debility consequent upon absolute abstraction of a large quanity of blood.

Test for Sulphur.—A solution of molybdate of ammonia in diluted hydrochloric acid, is stated by M. Schlossberger to be a most delicate test for the presence of sulphur.

CHICAGO MEDICAL COLLEGE.

Medical Department of Lind University.

The regular Annual Lecture Term in this Institution will commence on the second Monday in October, and continue until the first Tuesday in March following. Clinical Lectures *daily* throughout the term.

FACULTY.

J. S. JEWELL, M.D., Professor of Descriptive Anatomy.
H. A. JOHNSON, M.D., Professor of Physiology and Histology.
J. H. HOLLISTER, M.D., Professor of Materia Medica and Therapeutics.
HENRY WING, M.D., Professor of General Pathology and Public Hygiene.
F. MAHLA, Ph. D., Professor of Inorganic Chemistry.
EDMUND ANDREWS, M.D., Professor of Principles and Practice of Surgery, and of Military Surgery.
RALPH N. ISHAM, M.D., Professor of Surgical Anatomy and Operations of Surgery.
W. H. BYFORD, M.D., Professor of Obstetrics and Diseases of Women and Children.
N. S. DAVIS, M.D., Professor of Principles and Practice of Medicine, and of Clinical Medicine.
F. MAHLA, Ph. D.. Professor of Organic Chemistry and Toxicology.
H. G. SPAFFORD, Professor of Medical Jurisprudence.
J. S. JEWELL, M.D., Demonstrator of Anatomy.

FEES.

For the Winter Term, admitting to all the Lectures in the College,	$50.00
Graduation Fee,	20.00
Matriculation Fee,	5.00
Dissecting Ticket,	5.00
Hospital Ticket,	6.00

The Summer Reading and Clinical Term commences on the second Tuesday in March, and continues until the first Tuesday in July; and is free to all matriculated students of the College. Boarding can be had for $2.50 to $3.50 per week. For further information, inquire of

E. ANDREWS, *Sec'y of the Faculty.*

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THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., Editor.

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Original Contributions.

ARTICLE VI.

CAMP TYPHOID FEVER.

By WM. S. EDGAR, Surgeon 32d Regt. Ill. Vols.

Having enjoyed some opportunities for witnessing the ravages of this form of continued fever, as it exists in the central armies of the United States, I propose briefly to record some of my observations and conclusions concerning the primary causes and pathology; also, the complications and after pathology as determined by *post mortem* examinations.

Typhoid, like other fevers, is ushered in with a chill, but often so slight as to have escaped the particular notice of the patient, unless his attention be called to it, when he may say he has been chilly repeatedly the past day or two. I observe nothing peculiar in these chills or rigors diagnostic of typhoid.

These cases occurring in camp, are first noticed as being dull of perception, lying about, averse to exercise, hardly know what to complain of, but indicate debility. When closely questioned, they often say they "are sick all over;" appetite impaired, headache, confusion of mind, apparently sleeping much, but not refreshed, disturbed dreaming, or wakeful, with apprehension of some impending calamity.

During the exacerbation of fever, a burning heat of the skin

is noticed; when bathed with perspiration the heat is not reduced, as is usual with other fevers.

Thus far tne patient is reported ailing, unfit for duty, perhaps for three days, when he is admitted to hospital, and the attending surgeon, with the condition above described before him, proceeds to investigate the history of the case, to complete or establish the diagnosis if possible. The patient may be a stalwart lumberman from the forests of Michigan, Wisconsin, or Minnesota, whose brain never reeled nor muscles relaxed before with fever. He has but recently exchanged the pleasures and hilarity of the social board and family hearthstone, the associations of his childhood and youth, for the company of men, and mostly, if not entirely, strangers.

The rifle is placed in his hands, and the stern reality of exposure to wounds and death is upon him for the first time, (for the greatest prevalence of this fever is soon after the mustering in of raw troops,) I say the good cheer of the home table has suddenly been exchanged for the rough fare and associates of the camp. The joys and hilarity of the evening village party, or family fireside, is exchanged for the solitary tramp of the picket guard, far from home and friends; and we notice that with the less intelligent—those who read and write least—these moral agencies are most powerful.

I will call attention in this connection to the unprecedented mortality in some of the recently recruited black regiments, reaching, in some instances, one hundred a month, the majority of this disease occurring in their native climate, and while better fed and clothed (indeed their clothing has been too heavy) than their previous custom; their accustomed hilarity they miss. The duties and perils of their new life have engrossed their attention and depressed their spirits. Separated from their families, sweet-hearts, and homes, the merry song and exciting dance, the banjo and bones, that rang through the spacious cotton gin or sugar mill, no more impart that healthful and vitalizing activity to every function, particularly the brain, so indispensable to perfect digestion.

Instead, the deadly rifle and sabre are placed in their hands,

constantly reminding them of the personal danger of their new employment, thereby depressing their spirits, and imparting a grave, thoughtful deportment previously unknown to them.

Or our patient may have rank, and more responsible duties, and the nerve power may have become exhausted by long-continued, anxious labor, night and day, until his strength gives way, and he is compelled to seek recuperation through a long and weary process of repair. His sleep is but little, which does not refresh, as it is broken and disturbed with fever. I have a case in mind of a surgeon who had the charge of many wounded at the battle of Shiloh, and passed many days without sleep or rest, until he was relieved by the distribution of his patients in general hospitals, when he immediately sank down with a slow typhoid fever, and inability to sleep, from which he did not recover for many months.

It matters little from what cause the nerve power fails, whether by exhausting labor and watching, or depressed by protracted grief, or fear, whether by moral or physical causes, if the nerve power fails, the functions one after another fail.

True, we may meet with cases of typhoid fever without these concomitants, and with altogether different history; still, that some subtle agencies have primarily disturbed the cerebral function, we think will be manifest on careful inquiry.

Having sufficiently noted, as we trust, the evidence of the primary disturbance of the nerve power in this fever, I propose to consider some of the immediate consequences and complications, among which, to be first noticed, is the function of digestion, not so much in the stomach as in the duodenum, as the food taken into the stomach is broken down, rendered liquid by the gastric juice, and passes to the next organ, where the secretions failing, or being unhealthy, the farther elaboration of nutrient elements fails, and the chylopoietic vessels are not supplied. Instead thereof, chemical agencies supervene, forming acrid irritating excrementitious matters, which, exciting increased peristaltic actions, are hurried forward through the small intestines to tarry longer in the pouches of the colon, exciting congestion, and finally inflammation and ulceration of bowel, if the evil be not timely arrested.

The waste of the circulation being imperfectly replenished by the food taken, together with the effete and irritating matters retained in the circulation from the general failure of the glands to eliminate the same, abundantly explains the excitement of the heart and arteries, and the creation of the continued fever, as also its persistent character.

From this period we may have gradual decay; one function after another fails. Those of the skin, kidneys, and liver claim our early and special attention. As the case progresses to the condition just described, it is common to find rose-colored pimples, first on the forehead and breast, gradually extending over the body, (but this symptom is not constant, as some have erroneously claimed,) more or less incoherent talking, delirium, and the irritation already referred to in the bowels. The last is indicated by the dry, brown, cracked tongue, with red edges, offensive, watery ejections from the bowels, tenderness on firm pressure in various parts of the abdomen, which often becomes tympanitic.

The fever, if influenced by malarial complication, will observe some variation, exhibiting on alternate days exacerbations and remissions.

Typhoid pneumonia, commonly called winter fever, in the West and South, is not included in this description.

To recapitulate, the symptoms on which our diagnosis of camp typhoid fever is formed, are first the partial failure of the cerebral function, and as a consequence, the subsequent failure, in some degree, of all the functions of the body, the particular symptoms of which have already been mentioned.

To meet the first indication we would use early and persistently a nerve stimulant. Arnica, sulph. ether, (or Hoffman's anodyne, which is preferable,) from four to six stimulating doses every twenty-four hours. To promote digestion we would restrict the diet to the simplest, most nutritious, and easily assimilated articles, in limited quantities, beef tea, arrow-root, tapioca, and the like.

To aid the skin and kidneys to resume their functions, use warm baths, with the occasional internal use of diaphoretics and

diuretics; to promote the secretions of the liver and glands generally, a dose or two of calomel, mercury and chalk, or blue-mass, after the warm bath, or washing the body in warm water by sections (if the bath cannot be had); but the indiscriminate use of mercurials to cure this fever is unwise and even pernicious. If we have reason to apprehend complication from malaria (as is often the case) we give from three to four grains of quinine every two or three hours, until fifteen or twenty grains have been administered, during the remission, if any is observable, repeating the quinine in five or six days if the fever continues.

To obviate serious disease of the mucous membrane of the bowels, we resort early to the use of mild laxatives, repeated during the progress of the disease, and to the same end, and to blunt the acrimony of the secretions allow free use of mucilaginous drinks, which also comforts the patient by allaying his thirst. If the bowel affection becoms a serious complication, as too often occurs, notwithstanding the most judicious management of the case, and inflammation or ulceration is threatened; to relieve the tympanotic distension, we would cleanse the lower bowels first, with warm water injections, and after placing our patient on his right side, introduce a well oiled elastic bougie to the descending colon, whereby large quantities of flatus may be evacuated, greatly to the relief of the patient. It is usual to fail in this simple operation from neglect to place the patient on his right side, as it is obvious that if the patient is on his left side when the instrument is passed, the gas will occupy the highest point of the colon, viz: the ascending colon which may not be reached by the instrument, hence the failure. But if the patient be on his right side, the gas will ascend to the descending portion of the colon which brings it within reach.

This farther suggests the importance of the patient's position when local applications are made to the mucous membrane of the lower bowels, and which I apprehend receives but little attention from many practitioners. For instance, if a clyster is designed to evacuate the bowels, after it is administered, the patient should always be directed to lie on his left side which

position throws forward the contents of the ascending and transverse colon, thus favoring the evacuation, but if it is desirable that the material thrown into the bowel should remain as long as possible, if the patient be placed on his right side the hydrostatic pressure of the transverse colon is removed, and retention favored. An anodyne administered in this way at night, often assists materially in procuring rest. Astringents, vegetable or mineral, to check the diarrhœa are usually pernicious.

The patient's mind should be prepared from the outset for a protracted illness, yet the most hopeful prognosis should be persistently adhered to from the beginning to the end, both by medical advisers and attendants, which is of the utmost importance. No doubt or question of the final recovery should be intimated.

The ulceration of the mucous membrane of the bowels, and disease of Peyers' glands, so common where the case runs to a fatal termination, we regard as purely incidental, originating in the long continued presence of acrid irritating secretions and combinations in the bowels, rather than idiopathic.

I have endeavored in this brief sketch to show the importance of introducing into our camps, as prophylactics, *exhilarating mental influences*, more hilarity, fun, and amusements of whatever kind may be found practicable, such as games, music, dancing, horse-racing, &c.

It has already been stated that those who are not sufficiently intelligent to read and write, suffer most from this disease. The fact itself sufficiently intimates that such as are able to profit by it should be provided with cheerful and entertaining reading, and as far as possible the discipline of the camp should cultivate the intelligence of the soldier and cheerful employment of the mind.

If I have contributed a single suggestion of value, either for the prevention or in the treatment of this most prevalent and destructive disease, I will be pardoned by my professional brethren for this intrusion.

ARTICLE VII.

BRIGHT'S DISEASE OF THE KIDNEY.

By JOHN BARTLETT, M.D., of Chicago.

Read before the Chicago Medical Society.

Mrs. C. E., aged thirty-one years, of good constitution and of temperate habits, fell under my observation on the 24th of March last.

The following is her history: Thirteen years since, after the birth of her first child, she had a severe attack of dyspepsia, lasting for three years, and reducing her much in strength and flesh. She suffered also from leucorrhœa. As a remedy for these difficulties, soda, and the muriated tincture of iron were taken habitually. At the expiration of three years, her health was nearly or quite restored.

Five years since, she gave birth to a child. In this labor, her attendant having given assurance that delivery should be accomplished by a certain hour, gave her some medicine "to make his words good." The labor was actively stimulated, and the child violently extruded. Since then, she has been troubled with uterine disease, which was aggravated two years since, by a miscarriage, and again by an abortion in October last. For some time past, there has been a recurrence of her dyspeptic symptoms, the most prominent being acidity of the stomach and meteorism.

The patient was of large frame, and somewhat corpulent. She was four months advanced in pregnancy. On the 10th of March last, while lifting a weight, she felt something tear within her. Flooding and fever followed, on the 22d and 23d, the hæmorrhage was excessive; on the 27th, abortion occurred, the functions of the uterus being perfectly performed.

This fever, thus set-up, apparently by accident, and terminating in death in sixty-three days, it is my object to describe. The Society will bear in mind that my observation of the case dates two weeks after its commencement; and it may here be mentioned that the notes from which this report is made were

taken as an aid in the treatment only: they are consequently incomplete.

The symptoms may be considered in three stages. The first occupying twenty-five days; the second thirteen days, and the third twenty-five days. These were severally stages of progression, of mitigation, and of aggravation. The most prominent symptom, throughout, was fever. The febrile condition determined the state of the patient, and there was a general coincidence between it and the other symptoms in mildness or severity. It began with daily flushes of heat; these increasing in severity, became distinct paroxysms of rigor and fever. On the 12th day the fever was constant, though slight. There was a sensation of chilliness in the morning, and an evening exacerbation. In the progress of the disease the rigors were for a time lost sight of: the fever was continued. By the twenty-fifth day, the pulse, always frequent, had become rapid and feeble. The skin was invariably warm and dry, till the coming on of exhaustion at the close of the first stage, when the hands and face were cool. The tongue, at first coated with a white fur, soon became dry and brown; the teeth being covered with sordes. Wakefulness in the beginning, gave place to nervousness, and this to hallucination and delirium; finally there was an approach to stupor. The face had become pale, sallow, and death-like. The bowels were torpid, yielding small, dark-colored and offensive discharges, when stimulated by enemata. There was some tympanites. At the close of this stage of progression there occurred a new difficulty, which, in the end, proved most distressing and dangerous. The patient was seized with a violent attack of dyspnœa. There was an accumulation of a quantity of tenacious mucus in the air passages, producing great embarrassment of respiration, and causing a well-nigh fatal exhaustion. The dangerous depression resulting from this attack being recovered from, mitigation of the symptoms followed, the fever gave evidence of gradual abatement. The pulse lost its great frequency, and increased in force and volume. The skin losing much of its heat, was occasionally moist and natural. The tongue cleared completely; the sleep was

satisfactory, and listlessness gave place to sprightliness. The expression was excellent; the bowels became less torpid and their secretions natural. Appetite and strength returned in good degree. For discouragement, there remained accelerated respiration, and occasional attacks of dyspnœa; but these were not frequent, and the respiratory movements daily approached the proper mean.

At the end of seventeen days, improvement ceased. Every evening brought a chill, with its accompanying aggravation of fever. The pulse again became frequent and feeble. The skin, hot and dry during the fever, was at other times unnaturally moist. There was no natural sleep; there was nervousness and occasional headache, delirium, and general subsultus tendinum. The difficulty of breathing was constant, and the paroxysms of dyspnœa frequent. The appetite and strength failed. Death occurred by asthenia.

Having thus described the symptoms generally and collectively, it will be profitable, in order to the full understanding of the significance of each, that a review of the more important should be taken. Here, also, will be noticed certain important signs of disease, not mentioned in the general description. To such, in particular, I invite the attention of the Society.

The first peculiarity to be noticed is the frequency and want of equality of the pulse. In the first twelve days of my observation, twenty records, taken at all hours, give the average number of pulsations in the minute as 142. In the stage of mitigation, the average number was 126; and in the last period the average was 138. The mean of seventy-five observations throughout the disease gives a pulse of 134. The want of equality in the pulse was not less striking than its great frequency. In one instance, the pulsations at 4, A.M. were 113; at 6, A.M., 176; at 8, A.M., 128. Thus a variation of from twenty to sixty beats to the minute, in a few hours, was not uncommon, and the variation as to volume, force, and quickness was almost as remarkable as the irregularity in the number of beats.

An inquiry as to what hour in the twenty-four, the pulse was the more or less frequent, gives this result:

For the morning, -	124	For the evening, -	139
For noon, - -	136	For midnight, -	136

The relation of the movements of the heart to those of the chest was quite constant throughout. Thus, the extreme ratio of the number of pulsations to the number of respiratory acts, in the minute, was, for the minimum, as twenty-two to ten; for the maximum, as forty-five to ten. This coincidence may be further established thus. The average number of respiratory movements was:

For the morning, -	36	For the evening, -	47
For noon, - -	44	For midnight, - -	42

It will be observed that the movements of the chest, like those of the heart, were lowest in the morning, gradually increased at noon, and reached a maximum in the evening; falling toward midnight to the same number (nearly) as at midday.

Cerebro-spinal symptoms came on early. Dilitation of the pupils existed throughout the third week of disease; it was not again noticed until two days before death. No connection between this and any other condition could be traced. Next followed hallucinations, hilarious, and busy delirium, listlessness, stupor, and indifference. The dyspnœa was in part a nervous phenomenon. Under this head may be mentioned a general tremor or agitation of the body, occurring in the last week of life. This vibration was especially striking in parts moved in respiration. Some days before death, she had, both waking and sleeping, spasmodic startings of parts or of the whole of the body, as if from an electrical shock.

The bowels were usually costive, though diarrhœa was easily induced. In general, when one discharge occurred, several followed; and they were frequently, whether the quantity was small or large, consistent or otherwise, followed by great exhaustion. The discharges were usually semi-consistent, sometimes entirely so, sometimes watery. There was occasional colic, and meteorism was almost constant in the last half of the disease. No other connection between the state of the bowels and other symptoms was noticed than this; exhaustion after an operation, lead sometimes to a paroxysm of dyspnœa. On the

contrary, in the latter stages, the embarrassment of the lungs was relieved by an evacuation of the bowels.

Acceleration of the respiration was noticed as early as the twenty-fifth day of illness. Three days after this, the first paroxysm of difficulty of breathing took place. These attacks of dyspnœa were frequently simply a consequence of an accumulation of mucus in the air tubes; the excitor or motor power being deficient from exhaustion, from sleep, or from stupor. At other times they seemed dependent upon nervous influence. They occurred at all hours, most commonly at night, sometimes with distinct periodicity. During the paroxysms, tenacious, glairy mucus was expectorated. The average number of respiratory movements per minute during these attacks was fifty-two. They varied much in severity, occasionally being so slight that a change of position, or a cough, would bring relief. At other times they lasted for hours, threatening the life of the patient. Toward the termination of the case, the difficulty of breathing was constant. For two days before death, there was what might be called the respiration of the dying, The average number of respiratory acts per minute, from fifty observations taken in the last forty days of life was forty.

Notwithstanding this long-continued difficulty of breathing, no physical sign of disease in the chest was discovered until the sixth week, when dulness on percussion, and fine crepitation in the right infra scapula and dorsal regions indicated engorgement of corresponding portions of the lung.

On the forty-third day œdema of the hands and face first attracted attention. But, upon reflection, it was evident that this symptom had existed for some time unnoticed. For a week or more, extraordinary changes had been marked in the expression. Pallor and thinness of the countenance would offer at one visit a bad augury of the case. The next day dropsy would have filled out the face, and fever enlivened it, so as to give to the patient the appearance of health. These changes were mostly due to the œdematous condition. The anasarca was slight, and not constant. It was confined almost entirely to the face and extremities. It came and went without regu-

larity, and without appreciable change in the general state of the patient.

In a retrospective glance at this case, several symptoms are noted which should have led to an earlier examination of the urine. Inquiry elicited these facts, having reference to the kidneys: Pain of the back was complained of once, on the twenty-fourth day. Nine months previously, the patient had received an injury. In descending the stairs she fell, striking the loins against a step with great violence. The effects of this fall were traced up to the time of this sickness in a sense of weakness in the lumbar region, necessitating the use of strengthening plasters.

Examinations of the urine furnished the following facts: Quantity in twenty-four hours, from twenty-seven to forty-one ounces. When the quantity was twenty-seven ounces, the specific gravity was 1008. It was one eighth albuminous. It was smoky, and frothed upon agitation. Epithelium scales desquamative, waxy, and fibrinous casts were found in abundance.

Throughout the latter half of her sickness, the patient frequently expressed herself as free from all suffering, perfectly comfortable.

Diagnosis and Treatment.—For five years past, the patient had labored under uterine troubles. These difficulties had been aggravated by the occurrence of two abortions in the last two years. Injury had just produced a third. The case was accordingly judged to be one of irritative fever with a typhoid tendency; and upon this theory the earlier treatment was based. It was not till the full examination of the urine pointed distinctly to Bright's disease, that active antagonism of the symptoms was given over.

The treatment is of little interest except so far as it teaches what was beneficial or useless in relieving symptoms. It may furnish some addition to, or corroboration of, what is known of the *juvantia* and *lædentia* in similar cases.

Milk punch and the essence of beef were the chief stimulants used. At one time, the extreme prostration demanded the ex-

hibition of eight ounces of brandy in twenty-four hours. Various narcotics were employed to procure sleep, to relieve restlessness, or to control dyspnœa. Opium was given in several forms, and always with the effect of increasing watchfulness, or producing delirium, with this exception. In the last stages—to induce sleep, and relieve pleuretic pain, one-fourth of a grain of morphine was applied to the denuded skin. In half an hour sound sleep was produced, with a fall in the number of respirations from forty-two to twenty-five. Hyoscyamus, castor, and valerian had no effect. Asafœtida did not disappoint entirely; but the cannabis sativa answered an excellent purpose. It quieted restlessness, produced sleep, and sometimes prevented the occurrence of dyspnœa, or rendered an attack milder.

Antiperiodics, especially quinine, would sometimes prevent the paroxysms of fever, for one, or two days.

Strychnine was once given, in a very small quantity, to improve the tone of the stomach and bladder. In the twelve hours succeeding this dose there was incessant laughter and singing, in the sleep.

To relieve the head and lungs, in the latter stages, benzoic acid, acetate of potash, and tannin were tried without appreciable effect. On several occasions the carbonate of ammonia was given without any change in the symptoms.

To try the theory Frierich, as to the conversion of uruea into ammonia, in the blood, the breath was twice tested during a paroxysm of dyspnœa. No ammonia was detected.

A *post mortem* examination was made, but under the most disadvantageous restrictions as to time. Dr. WANZER and myself were unable to do more than examine the kidneys. They were of the ordinary size and shape, but softer than natural. Their color was a light purple, and their surface, as seen through the capsule very granular. Their weight was four and one-half ounces, and their specific gravity .988. It is much to be regretted that decomposition set in before specimens of these organs could be submitted to the microscope. Fifty hours after death, their structure was disorganized.

ARTICLE VIII.

NITROUS OXIDE, OR "LAUGHING GAS," AS AN ANÆSTHETIC.

By E. ANDREWS, M.D., Professor of Surgery in Chicago Medical College.

Considerable stir has been made among the dentists of late by the introduction of a new anæsthetic, which is nothing else than the old-fashioned laughing gas of the chemists. As is usual in such matters, the quacks of tooth-pulling, make the most noise about it, while the respectable men use it with much less enthusiasm. Perhaps the most amusing thing about it is that a large portion of the second-rate dentists have been victimized by the introducers of the gas, and induced to pay fifty dollars apiece for the "*secret*," and for a small package of Nitrate of Ammonia, with which to commence operations. In some handbills distributed around the city it is called by the sounding title of Muhrite of Oxygen, and is extolled as being entirely free from the dangers of chloroform. The gas thus heralded, is simply the old-fashioned protoxide of nitrogen, otherwise called nitrous oxide, and laughing gas. The term "Muhrite of Oxygen," is a sheer fabrication, there being no such name or compound in chemistry. The article is prepared by heating nitrate of ammonia in a glass retort. The salt is decomposed by the heat, and converted into nitrous oxide and water. It is passed through a water bath to free it from any impurities that may come over with it, and then collected in a large gasometer. For the purpose of inhalation, it is drawn off into india rubber gas bags, holding three to five gallons each. Although, as above mentioned, the dental quacks make the most noise about it, still the article is more or less used by all the principal dentists of the city. As everything which possesses claims as an anæsthetic is of importance to the surgeon, I thought it my duty to examine into its qualities, and am indebted to Drs. J. C. Fuller, J. C. Dean, and W. W. Allport, dentists in this city, for special facilities in pursuing my inquiries. To be-

gin with, I took a moderate portion of the gas myself, in order to judge of the sensations produced by it. The first effect was a sense of buzzing and vibration over the whole system, precisely like that produced by chloroform, which increased rapidly to such an uproarous degree, that the senses of hearing, feeling, and seeing, seemed to be rapidly becoming lost and overwhelmed in a tremendous roaring, jaring, and dizziness. At this point I was aware that I was drawing in and throwing out my breath in a furious manner, without any reason, and without conscious effort. By pinching the flesh of my hand I perceived that I had still, to some degree, the power of feeling pain, though all the senses were blunted. As I did not wish to proceed to entire unconsciousness, I then withdrew the tube from my mouth, having been inhaling about two minutes. The effect subsided in about two minutes more, the return to full consciousness being accompanied by a free perspiration and a mild exilaration of the feelings. The pulse at the beginning was 84 per minute, and in the height of the effect about one hundred. I then took a larger quantity and administered it to a patient to pretty full anæsthesia. The pulse at the beginning of the experiment was 85 per minute. In about a minute it had risen to 100, with diminished force, and a free perspiration broke out on the forehead. The patient now began to look blue in the lips, showing obvious marks of incipient asphyxia. At the same time he began to make his inspirations and expirations in a furious and noisy manner. The pulse by another minute had increased to 120 per minute, and was feebler. The perspiration was more copious, and the blue asphyxiated appearance of the countenance was so decided that I judged it prudent to withdraw the gas, and terminate the experiment. The anæsthesia was perfect, the patient not shrinking from the severest pinches, and not remembering any pain from them afterwards. The anæsthesia continued about 45 seconds, when the patient began to laugh violently, and finally came to his consciousness with an exulting yell, and a loud smack of his fists. Ordinarily the patient makes but little trouble by any boisterousness, and seldom feels any depression, nausea, or other trouble afterwards.

A man named COLTON, an itinerant lecturer on Chemistry, who has traversed the country for many years in that capacity, claims the credit of having demonstrated the anæsthetic power of this agent to the world, while he assigns the original discovery of its effects to a Dr. WELLS. COLTON claims to have given it to patients for the extraction of over eight thousand teeth, and without injury in any instance. There are, however, cases on record of headache and delirium following its use, the delirium in a few cases lasting months, and it is asserted that deaths have resulted from it, but I have not been able to obtain decisive authority for the statement, except in one instance. Animals, however, have been killed by it. So far as we can judge at present, the use of nitrous oxide would seem, like all other anæsthetics, to be accompanied by a slight but positive danger. The blueness of the lips indicating incipient asphyxia, is present in every instance, and it is not probable that such a state can be induced upon all sorts of patients, and in all pathological conditions with entire safety, still I know of no reason at present for supposing that it is any more dangerous than chloroform, and it is certainly much more agreeable to take.

For the purposes of general surgery, the nitrous oxide will not be available. The chief difficulty is the extremely transitory nature of its effects. Having only from 80 to 90 seconds of insensibility in which to operate, the surgeon can seldom use the gas, for if he should continue the inhalation without interruption for many minutes, death would probably ensue from asphyxia, as the nitrous oxide seems to have no power to arterialize the blood. Still in operations which require only a moment for their performance, such as lancing felons and abscesses, it might be easily used. In some instances, also, it could be given repeatedly at one sitting, the patient being allowed to recover from one inhalation before proceeding to another, and the operation completed by successive stages.

It has both conveniences and inconveniences connected with it. Of the former, is the fact that scarcely any time is required to produce its full effects, which is an important item with the surgeon, and also that there is no nausea and vomiting after-

wards, which is a comfort to the patient. On the other hand, it is a difficult thing to preserve and carry, and the practitioner going to see a patient with it, must take with him a five gallon gas bag full, which he can by no means put into a corner of his pocket.

It is probable, therefore, that nitrous oxide will be permanently established as a dental anæsthetic, but will only be occasionally used in general surgery.

Selections.

NOTICE OF THE SPOTTED FEVER,

AS IT OCCURRED AT NEWPORT, RHODE ISLAND, IN THE MONTHS OF JAN., FEB., MARCH, AND APRIL, 1863, WITH A HISTORY OF THE DISEASE, ITS SYMPTOMS, DIAGNOSIS, AND TREATMENT.

By PHILIP S. WALES, M.D., Surgeon U.S.N.

During the past winter, several sections of our country have been visited by a disease of a febrile character, very little known and marked by peculiarities clearly distinguishing it from those fevers ordinarily met with. To some of the localities it appears to be an entire stranger, as in Philadelphia, for instance, where Dr. Gerhard assures us it never was witnessed before. The two epidemics of negro fever occurring in that city, the first in 1820-21, the second in 1848, were entirely different in their course and symptoms from the one under consideration, yet recognizing some affinity with it in being blood diseases. In both these epidemics the disease was almost always confined to the negro population, and thus in one prominent character very unlike the spotted fever which recognizes no color, class, age, or condition in life.*

* In December, 1812, a malignant typhus broke out at Camden, opposite Philadelphia. The disease appeared to possess characters different from ordinary typhus, and was extremely fatal under the system of treatment then pursued—evacuant.

When Dr. E. Strong's work on Spotted Fever appeared, the physicians were impressed with the idea that their malignant typhus was either a variety of, or a close analogue of, the fever described in that book. They thenceforth adopted the treatment he recommended—stimulants—with success.

In February, 1813, the same disease appeared in Philadelphia, first in the

Indeed, we might say that this fever is almost exclusively peculiar to New England, so rarely has it been seen in recent times outside of those States. From what I learn from the physicians of Newport, it would seem that they have known the disease to have prevailed latterly along with scarlatina and typhoid fevers in the towns and counties adjacent. Very likely this is so, and many cases may have been taken for typhoid fever, pneumonia, &c., and reported as such, or again, as anomalous cases of fever, as in the instance of Dr. D. Crary, of Hartford (see *The American Journal of the Medical Sciences* for January, 1863, p. 146). An old practitioner from Maryland recognized the disease at once, in the first case that happened at Newport.

The army surgeons state that there were cases of this disorder during the winter, at Portsmouth, Va., Annapolis, and Washington, among the U.S. troops. A limited but fatal epidemic of the same occurred in Centre and York Counties, Pa., in the month of March. Between the months of February and April, a number of cases showed themselves in Philadelphia, and its neighboring towns of Manayunk, Norristown, Frankford, Chester, and the Falls of the Schuylkill. At Newport, Rhode Island, seven cases occurred among the midshipmen billeted on the school ship in the harbor, and on diligent inquiry, Assistant-Surgeon Rickets could learn of no well authenticated cases in the town. A quack asserted that he had had two under his charge; both died.

These are, so far as I can learn, the limits of the disease as it prevailed last winter, though I am inclined to believe that many cases presented themselves both in the towns and counties of the New England States, New York, and Pennsylvania.

It is stated that the spotted fever first appeared in this country at Medfield, Mass., in 1806, and soon after in Connecticut. In 1810, it prevailed in the county of Worcester, Mass., with unexampled mortality, baffling the best endeavors of the physicians. In the autumn of 1812, it appeared among the United States troops at Greenbush, and other military stations, making

Northern Liberties, and spread in various directions over the city. At the same time the fever was prevalent in Frankford, Abington, Byberry, and in Philadelphia County, in Bucks County, and various parts of New Jersey. The disease was complicated with thoracic troubles, and was called "the epidemic pneumonia" by the practitioners in the various counties of the latter State. Several army surgeons, then in the neighborhood of the disease, recognized it as the spotted fever of New England. See their letters in the *Med. and Philosophical Register*, Vol. III, page 491.

In the *Eclectic Repertory*, Vol. III., page 542, there is an allusion to the disease as it occurred in Philadelphia and Camden, in 1812-13.

great havoc among them. So alarming, indeed, had the disease become that the counsellors of the Massachusetts Medical Society appointed a committee consisting of Drs. Thomas Welsh, James Jackson, and John C. Warren, to make all possible inquiry and investigation into its history and treatment. Their able, elaborate, and judicious report occupies a place in that Society's reports (Vol. I.)

During the winter and spring of 1813, it was prevalent and extremely fatal among the inhabitants of Vermont, in the upper part of the State of New York, in several inland towns of Massachusetts and Maine, assuming a number of treacherous shapes, and extremely mortal. Boston suffered at the same time, though in this city the disease affected principally the new levies of the United States troops.

The frequent appearance and fatal character of this disease drew forth several ably written papers on the subject. See report above mentioned, also a paper by Dr. Thomas Paige, of Hallowell; Treatise on Typhus Syncopalis (spotted fever), by Thomas Miner, M.D.; Gallup on Epidemics; Thacher's *Modern Practice of Medicine*, Boston, 1826; Thomas' *Practice of Medicine*, by Prof. D. Hosack, N.Y.; Dr. E. Strong on Spotted Fever, Mass. Med. Society Communications, Vol. II., &c.

From these various works it would appear that the disease was well understood in all its protean forms, and remarkable success followed its treatment.

Dr. Paige, in the paper above mentioned, describes four varieties of the disease. 1st. That which principally attacks the brain. 2d. The spurious *peripneumonic* form characterized by pain in chest and oppression of breathing, with cough and expectoration of viscid, dirty-brown matter, and in some of the most malignant cases blood completely dissolved. 3d. Where the disease was directed to the stomach and bowels, producing cholera morbus or colic. 4th. When the extremities powerfully suffered with coldness, numbness, and pains. In all these different varieties one common type was observed as their basis, though veiled by the various modifications; and the same treatment was mainly successful.

So that it appears these local phenomena often draw away the attention of the physician from the main disease, spotted fever, as happened in Case VII., where the pneumonic symptoms were the most prominent, and this mistake was particularly apt to happen at this early period, the practitioners not being in possession of our present precious method of physical diagnosis; thus, what wonder to see the disease described under the vari-

ous titles of peripneumonia typhoides, malignant pleurisy, &c.? So that, really, it was spotted fever that was alluded to by Dr. Hugh Williamson, as occurring in North Carolina, in 1792 (see *Medical Repository*, first series, Vol. II.); and the same is true of the epidemic which prevailed in 1749, in Rhode Island, and reported by Dr. John Bard, in *Med. and Philosoph. Register*, Vol. I. This is perhaps the earliest account we have of the spotted fever, as it prevailed in the United States. There is, indeed, no reasonable doubt but that the typhoid pneumonia, which has prevailed from the earliest period of our history at various times, and in various sections, is identical with spotted fever, for says Dr. Thacher, op. cit.: "According to its various symptoms and forms, this pestilence has been termed bilious peripneumonia or typhoid pneumonia. In some of its appearances and forms it may be identified with the petechial fever above mentioned, but if it be a distinct disease, there is an obvious and close analogy in their nature and character." Again, Dr. Hosack, in the Appendix to Thomas' *Practice of Medicine*, says: "This disease (peripneumonia typhoides) is not a 'new calamity,' an 'unknown epidemic,' as it has been represented by some writers; on the contrary it has been well described by Sauvages (see *Nosologia Methodica*, Vol. I.), Huxham, and others. The causes of the disease are no less compound than the disease itself. The local inflammatory affections are probably occasioned by the sensible changes in the atmosphere, while the typhoid character of the disease is derived from an epidemic constitution of the air, the same which has given rise to the typhus petechialis, or spotted fever, which has prevailed for some time past in our Northern and Eastern States, and which is doubtless a similar disease, with the exception that the present epidemic is implicated with symptoms of local inflammation of the chest, brain, or throat, &c., the effect of the present cold season of the year."

Dr. John Huxham described peripneumonia typhoides in the year 1759,* and Sydenham in 1680,† nearly two centuries ago; and the latter date is probably the earliest European account we have of spotted fever or peripneumonia typhoides, as it was then called.‡ Our medical fathers have given no description

* See Huxham's Works—De aire et morbis epidemicis.

† See Thomas Sydenham, M.D.—Opera omnia. Schedula monitoria de novæ febris ingressu, page 486; et Cap. v., page 550—De Febre stationaria ab anno 1685 ad 1690.

‡ Some writers have stated their belief that Cullen and Hoffman have also witnessed the disease, the former alluding to it as a synochal fever, and the latter as a catarrhal fever. Boerhaave and Lieutaud have imitated Sydenham in their allusions to the Febres Petechialis.

which to our apprehension embraces it, though we have no positive proof that it did not happen in the earliest times.

From all this, we conclude that spotted fever has prevailed at various times both in Europe and America, under titles expressive of some of its numerous local complications or forms, and thus giving rise to errors in the recognition of the nature of the various epidemics leading to the separation of diseases essentially the same, and ignoring the identity of the constitutional malady common to them all.

Symptoms.—The advent of spotted fever is marked in different cases by an exceeding variety of symptoms; scarce two cases resemble each other. I shall first give a resumé or enumeration of the morbid phenomena presented by the cases which were seen at Newport, and afterwards submit the cases themselves in detail.

Patients are sometimes suddenly arrested in their employment or pastime with intense headache and delirium; but more commonly the disease begins with shifting pains in the extremities and joints, headache often of the most atrocious character, nausea, or vomiting, along with a chill, which last, however, soon subsides, and the characteristic delirium and dulness set in. The delirium varies in intensity, occasionally furiously maniacal, generally moderate and quiet; there is extreme restlessness and jactitation. The sensibility of the whole surface is sometimes so unwontedly increased that the patient cannot even bear to have his hair touched. There is generally remarkable prostration of strength, and the limbs seem paralyzed, and are numb, and in some cases even insensible; there is deafness, dimness of sight, or even complete loss of vision. A few have convulsions and opisthotonos. The tongue is moist, yellowish, or brownish, never like the red, chapped, beef-like tongue of typhoid. The pulse small, even thready; sometimes extinct in very malignant cases, irregular, or intermitting; skin cold, and occasionally of a deadly pallor, and like polished marble; eyes glassy, and the pupils irregular in their action, sometimes contracted, then suddenly dilated. When reaction takes place, the pulse becomes fuller, skin warmer, and then there is marked uneasiness, the patient tossing himself in every direction with delirium; these symptoms remaining three days, the patient may be restored to convalescence, or the disease may advance into stupor, and come to a fatal termination.

The intestines appeared in general to be exempt from the effects of the disease, except in Case 6, where there was obstinate diarrhœa; the others occasionally required a mild aperient.

The bladder gives sometimes great annoyance, and hematuria is encountered from the very beginning. Profuse perspiration took place in one case, possessing a peculiar mawkish smell. One prominent symptom in Case 7 was inability to swallow.

One of the most peculiar marks of the disease is the *eruption*, which may occur in all stages of the disease, and in three of the cases below detailed it made its appearance on the first day, on the second day in three, on the tenth in one. The spots assumed the form of small, round ecchymoses of various sizes, from the head of a pin to the size of a split pea, of a light red color, like the bites of fleas. As the case advanced the splotches increased in size and coalesced, forming larger ones, or, properly patches, and in bad cases assuming a livid or purplish color. Again, the form was that of reddish streaks, as if caused by striking the parts with a bundle of twigs. In all cases the eruption was even with the skin, and appeared first upon the extremities, generally the upper, and then over the face and trunk. The duration of the spots varied, sometimes disappearing in two or three days, at others holding on for a couple of weeks, and then gradually disappearing as convalescence set in; or becoming larger and deeper on approaching death; and when this event happened, they resembled bruises, were very distinctly marked, and those previously quite light or almost imperceptible were readily observed. Most of the authorities upon this subject have generally stated that the eruption occurs throughout this disease in some of its varying degrees of size and colors, while on the other hand there is not wanting others who assert it to be only present in one out of six cases. All the Newport cases presented it, as will be seen below.

The passive hæmorrhagic character of the eruption was well understood by those who saw so much of it between the years 1810–18. Dr. Miner has observed that common typhus may prevail along with this disease in the same season, but its characteristic symptoms, eruption, &c., suffice to prevent errors in diagnosis.

The above resumé of symptoms was drawn from the seven cases which I now append, and the statements of those who hourly watched the patients from the beginning of their illness to its end. The cases are described in the order in which they broke out upon the school ship. I should here remark that there are two vessels lying in the harbor of Newport attached to the Naval Academy, and used as schools for practical instruction of the midshipmen. The students occupied them as quarters, and slept in hammocks, in the usual manner of sailors,

between decks. Those ships were always kept in the most excellent hygienic condition, as regards cleanliness and ventilation. For the latter, the Academy is much indebted to Surgeon James C. Palmer, U.S.N., whose suggestions as to the arrangement of steam pipes in the holds were carefully carried out by the superintendent of the institution with a most unlooked-for, but yet truly gratifying success, exceeding the most sanguine wishes of their originator. The spotted fever occurred upon only one of the vessels, and as soon as the patients showed symptoms of illness they were removed to the shore hospital, also under charge of Surgeon James C. Palmer, so that there was universal concurrence in the opinion that a residence upon shipboard had nothing to do with the origin or extension of the disease.

Case I. F. J. S., midshipman, aged 16, born in Virginia, was placed on the sick list January 15, 1863, complaining of sore throat with slight headache, for which some simple remedy was prescribed. Later in the day he complained of severe headache, fever, and delirium; there were jactitation and restlessness, tongue brownish. During the night these symptoms became more severe.

Jan. 16. This morning there is less headache, and though restless, there is no jactitation. An eruption has appeared on the legs and arms, in some places of the bright blush of erythema, in others livid and as large as a pea, the result of extravasation of the blood; there are also some dark colored pimples. Tongue brown, and the teeth covered with sordes. Yesterday evening his bowels were opened by a mild purgative, and a diaphretic mixture with an opiate given. This morning cold water was applied to the head, and weak toddy given to support the strength, the typhoid condition being decided, with passive extravasation in the cutis.

17*th.* Patient in a drowsy condition, but when addressed answers promptly, and seems in full possession of his intellect. The livid spots are disappearing from the arms, but diffused blotches remain upon his hips; no fever; tongue now white in its middle, and red at the tips and edges. Three small pustules made their appearance upon the right leg.

18*th.* The spots disappearing; delirium continues, though when aroused converses lucidly whilst engaged in conversation. No excitement of pulse; complains of much pain in the joints. Tongue covered with a thick coating of brownish fur, the teeth with sordes. Bowels moved by an aperient; apply a blister 3 inches by 6 inches to back of neck, ice to head. Brandy toddy

and milk. ℞.—Pulv. Doveri, gr. x.—hora somni. 7, P.M., tenderness in right iliac fossa with tympanitis.

19*th.* Slept some last night; delirium continues, and he passes his urine involuntarily. The *eruption* almost entirely disappeared, except the red patches upon his hips; pulse 145; extreme tenderness in epigastric and iliac regions; tympanitis. Teeth covered with sordes, and the tongue very brown and dry; debility extreme; face flushed; continued ice to head, sponge the surface with tepid water; dress blister with cerat. sabinæ; milk punch. ℞.—Ammoniæ carb. ʒj; mucilag. acaciæ, syr. tolutani, āā fʒij.—M. A teaspoonful every hour.

20*th.* The fever continued to progress all day yesterday until his pulse beat 163 a minute; became comatose finally, and died at 11.20, P.M. No *post mortem* could be had in this case; anxious and distressed parents stood around the beds of most all of these young gentlemen from the beginning to the end of their disease, and took charge of their bodies when dead.

Case II. L., midshipman, aged 17; born in N.Y.; admitted to the list January 28th, complaining of pain in the limbs, calves of the legs. The lower limbs present an eruption like the bites of insects, and he is inclined to believe that the roaches, with which the ship ("Santee") swarms, have bitten him. The spots are of an ecchymotic character, even with the skin, and of various sizes and tints, from pale red to livid. There is no other evidence of disease whatever.

Jan. 29. Patient has still the same marks upon the legs, but nowhere else; back of the right hand swollen and slightly red; calf of the left leg swollen and painful, but not reddened. Pulse and tongue natural, in fact there is no evidence of disease anywhere, except the ecchymotic spots, which, under other circumstances than the present, would be taken for flea-bites, and not excite solicitude. Ordered, ℞.—Potass. chloras. ʒss; acid hydro-chlor. fʒj; aqua dest. fʒviij.—M. A tablespoonful every third hour. Bowels have been freely opened. Milk toddy.

30*th.* Spots on the legs fading; the swelling of right hand, which occurred during the night, diminishing; tongue clean; pulse natural in frequency, but too compressible; tenderness to the least touch all over the body, but particularly in the epigastric region, around the umbilicus, and in the right iliac fossa. No cephalic symptoms whatever. Stomach excessively irritable, and vomiting of a purplish colored matter. The chlorinated solution was suspended, and tr. chloroform comp. fʒj after each emesis. ℞.—Quiniæ sulp. gr. ij; strychniæ gr. 1-60th—M. Every four hours. Blister 6 inches by 4 inches to epigastrium

continued sufficiently long to produce only a rubefacient action. P.M., was removed to the hospital in Newport, where immediate improvement set in. No vomiting from 1 to 10 P.M.

31*st.* Well-marked improvement; pulse natural, both in frequency, force, and volume; petechiæ scarcely perceptible; slight tenderness to touch over abdomen; countenance natural; sponge with tepid water dashed with the liquor sodæ chlor.; continue strychnia every three hours. ℞.—Ol. ricini f℥ij; ol. terebinthinæ gtt. x.—M. Take. Raw oysters, jelly, and milk punch—quiniæ sulph. gr. ij every sixth hour. P.M. Has passed the day favorably, except that he had an attack of vomiting, which was relieved by sinapism.

Feb. 1. Symptoms all favorable; bowels moved; pulse natural; tenderness scarcely perceptible; continue strychnia and quinia. ℞.—Cerii oxalatis gr. ij, every third hour.

3*d.* Is decidedly convalescent, requiring no more medicine; continue nourishment.

6*th.* Gaining strength; out of bed.

14*th.* Continued to improve up to the present, and was discharged cured.

Case III. W. K. B., midshipman, aged 17; born in Connecticut; was admitted to the sick list March 16th. Early in the morning small red spots, even with the surface, were observed upon the face and wrists, and were carefully watched; during the evening similar petechiæ were seen upon the lower extremities. Fever and delirium also set in at this time with extreme restlessness; was brought from the ship and lodged in the hospital. Ordered, ℞.—Quiniæ sulp. gr. xij; strychniæ gr. ss.—M. et ft. pill. No. iv, one every four hours.

March 17. Has been delirious and in constant motion all day. Cut off his hair and applied cold to head. Continued same medicine as yesterday without the quinia.

18*th.* The patient is rather more comfortable, and has lucid intervals in the delirium; pulse soft; tongue natural; passed his urine, and had a motion of the bowels. Continue strychnia; apply blister to neck; cold to head.

19*th.* Abatement of all the symptoms. The strychnia was omitted yesterday evening on account of the occurrence of cramps in the gastrocnemii muscles. Repeat the medicine twice to-day.

19*th.* Had a paroxysm of fever towards evening; delirium pretty constant, though he recognizes his friends and answers correctly when spoken to. Bowels not moved. ℞.—Ol. ricini f℥ij; coughs a good deal, and expectorates bloody mucus; fauces

have been inflamed from the beginning. No abnormal sounds can be heard in the chest. Puts his hand frequently upon the right hypochondriac region as if he suffered pain there. Apply blister 4 inches by 6 inches over this region until the skin is reddened. Milk punch during the night. Continue the strychnia. Pulv. Doveri gr. viij, hora somni.

20*th.* Passed last night comfortably, generally in a sound sleep. Pulse less frequent, softer and more feeble; cough much abated; tongue more moist. R.—Pulv. Doveri gr. v, ter in die, strychniæ gr. 1-32 t. d. Diet, oysters, milk punch, &c. Dress blister on the neck. P.M. The febrile exacerbation less violent than yesterday. Continue treatment throughout the night. Sponge surface with a mixture of equal parts of vinegar and water.

21*st.* Passed a good night; urinated twice, and is inclined to complain of trouble about the bladder. Suspend strychnia. R.—Spt. æth. nit. f℥j, ter in die. Dress blister. Milk punch, oysters, Scotch ale, and quiniæ sulph. gr. ij, ter in die.

22*d.* The symptoms more favorable. R.—Tr. ferri chlorid. gtt. viij, ter in die; other medicines suspended; continue supporting diet, and give at bedtime, R.—Morphia sulph. gr. ¼.

23*d.* Recovering slowly but yet decidedly. Continue iron and diet.

25*th.* Convalescent. Continue diet and the tincture chloride of iron.

27*th.* The patient had to-day an accession of fever, is quite restless, with occasional opisthotonic convulsions; suspend the iron and resume the strychnia in same dose three times a day. Milk toddy, broth. R.—Morph. sulph. gr. ¼, hora somni.

28*th.* The excitement of yesterday subsided. Nourishing diet; suspend medicine.

29*th.* Comfortable; diet same.

April 1. Again convalescent; diet as formerly.

3*d.* Condition good; has had profuse perspiration. R.—Acid. sulph. aromat. gtt. x, ter in die; ale, nutritious diet. P.M. Though doing so well up to this morning, he had been kept in a state of nervous agitation all day by the minute cares and extreme solicitation of his mother, who is sometimes unable to restrain her grief. His father arrived at 4 P.M., and though he did not at this time appear excited, in a few moments afterwards he fell in a paroxysm of convulsions, which continued, with short remissions till 9.30 P.M., and then yielded for about one hour. Mustard poultices were intermittently applied; cold to head, and his feet put into hot water; an enema of turpen-

tine was also given. The second paroxysm yielded at 2 A.M. next morning, and left him insensible. The pulse varied all night in force, frequency, and regularity. R.—Tr. valerian f℥ij, Brandy ℥ss during the day.

4*th.* Somewhat more tranquil up to noon, and partially restored to sensibility; pulse fuller. Repeated turpentine enema; wine freely; cold to head, and hot water to extremities continued. At 6 P.M. had profuse *black vomit*, which kept up to the last. He expired at 8.30 P.M. It should be remarked that this young man came from Middletown, Connecticut, and had a few weeks before convalesced from scarlet fever. His family physician observed that this season all fevers in that place had a disposition to the typhus type, and I believe also said there were or had been spotted fevers there recently. He had been on board ship only a few days when taken sick.

Case IV. D., midshipman, aged 16; born in Maine; was admitted March 29th. Was seized suddenly, and brought early from the school ship "Constitution" to the town hospiial. Has headache, vertigo, and stupor; pulse thready; ecchymotic spots upon lower limbs. R.—Strychniæ 1-32 t. d.; blister to neck; wine.

March 30. Stupor and vertigo less; pulse somewhat stronger and less frequent; fuller; tongue moist; headache still continues. Brandy toddy, beef tea, and strychniæ gr. 1-32. To allay the nausea which has been very distressing—℞.—Tr. chloroform. comp. gtt. xxx.

31*st.* Continues to improve; reaction complete; pulse increased in strength and less frequent; cephalic symptoms gone. Continue medicine and diet.

April 1*st.* Partial opisthotonos occurred last evening, the strychnia was accordingly suspended. Pulse irregular and feeble, but brought up by the free use of brandy.

2*d.* Opisthotonos relaxed during the night, but he was excessively restless until tranquilized by an opiate enema; continued to lie upon his face until morning; when he awoke he spoke but once, "it hurts," and was turned over upon his back. Brandy and stimulants were used freely without avail; he breathed his last at 9.10 A.M.

Case V. G., midshipman, age 14; born in New York; admitted to the sick list April 8, 1863. At half-past ten o'clock last night he complained of sore throat, and had some fever and headache. The weather was bad, and prevented his immediate removal to the Naval Hospital in town, so he was detained on board until morning, having taken, during the night, spt. æther

nit. When arrived at the hospital, he had stupor from which it was difficult to arouse him, but at these times he answered sensibly; headache; pulse thready, almost imperceptible; death-like pallor; extreme debility; arms and legs dotted with minute ecchymoses; and passed the urine and feces involuntarily, the latter profuse, black, and intensely fetid. Stimulants were administered from the moment of his arrival, ammoniæ carb., sherry undiluted, milk toddy, and sinapisms to abdomen and extremities; these remained on a half hour before reddening the skin. The pulse did not rise under treatment. At 10 A.M. began taking the following formula: ℞.—Strychiæ gr. j; aquæ destil. f℥iv; acid. sulph. aromat. q. s ft. sol. A tablespoonful every fourth hour. Also R.—Quiniæ sulph. ℥j; tr. cinchonæ comp. f℥ss; acid. sulph. aromat. q. s.; aquæ f℥j. A tablespoonful every sixth hour. Frictions with tr. capsicum and chloroform to spine and surface. P.M. Had another evacuation, less profuse but of the same character as the first. Later in the evening some signs of reaction; pulse sensible to touch; great jactitation; pallor yielding, and there is even a tinge of redness on the cheeks; frictions kept up.

April 9. After 2 A.M. this morning, the patient became furiously delirious, and died at 7.48 A.M. Frictions with hot water, &c., and the internal administration of stimulants were perseveringly followed up to the last moment.

Case VI. T. T., midshipman, age 17; born in New Hampshire; was admitted April 13th, complaining of pain in the glans penis, and of passing blood; warm hip-bath, and cups to spine near kidneys were ordered. ℞.—Spts. æther. nit. f℥j ter in die; pulv. Doveri gr. x, hora somni.

April 14. No material change in his condition since yesterday. Continue treatment.

15*th.* Hæmaturia much diminished, and is now laboring under severe catarrh; ordered magnesia ℥j now; afterwards he was ordered quiniæ sulph. gr. ij, ter in die, and five grs. of the pil. hydrarg. to be taken once during the day.

16*th.* Improving a little; urine slight, tinged with blood: nausea and pains of a rheumatic character in extremities; continue medicine as yesterday. To relieve nausea, ℞.—Tr. chloroform co. gtt. xxx, ter in die.

17*th.* Bowels constipated; enema and ℞.—Hyd. chlor. mitis gr. v; pulv. rhei gr. x.—M. Urine somewhat discolored. Spt. æther. nit. and infus. lini.

22*d.* Up to this time has improved; no blood in urine; general condition better; pulse stronger; bowels somewhat consti-

pated, for which was ordered a saline aperient; petechial spots have appeared on arms and legs.

23*d*. The parotid on left side has enlarged considerably. Apply unguent. iodinii. ℞.—Potass. iodidi gr. viij, tr. gentian comp. f℥j, ter in die.

24*th*. Enlargement of right parotid gland this morning; the left very large. Continue iodine externally and internally.

25*th*. Both sides neck very much swollen, otherwise doing well. Continue medicine.

26*th*. Swelling declining on left side, and rather larger on the right; colicky pains sometimes severe. Omit iodide potass. ℞.—Tr. chloroform comp. gtt. xl at once, and repeat this medicine in doses of twenty drops pro re nata.

29*th*. Tumor on left side pouting, and declining on the right. Continue potass. iodid.

30*th*. Opened the abscess on left side at the angle of the jaw, and let out a large quantity of pus, with immediate relief. Apply poultice, and continue medicine; supporting diet.

May 1. Opened abscess on right side, and poulticed.

2*d*. Both abscesses discharging profusely, and passed stools, tinged with blood, during the night. ℞.—Calomelanos gr. v, ol. ricini ℥j; M.; also tr. chloroform comp. gtt. xxx, twice.

3*d*. Bowels being loose last night, he took R.—Creta ppt. ℥j, pulv. Doveri ℥ss, ft, chart. No. j, and then R.—Ext. nucis vom. gr. ij, pulv. opii gr. vj, M. et ft. in pill. No. vj. One every six hours. Diet supporting.

7*th*. Improving gradually, but his bowels keep rather loose, though the last two stools are natural. The abscesses are discharging less. Suspend all medicine, ordered one pint Scotch ale daily, and good nutritious diet.

8*th*. Small stools and numerous. R.—Plumbi acet. gr. vj, pulv. opii ij. M. ft. pil. viij. One every three hours; milk toddy, and warm diet.

9*th*. Pulse small, and 140 in a minute; ecchymotic streaks extending from both groins upwards upon the abdomen; discharge from abscess continues, and the diarrhœa is also frequent, but not large stools; these were checked for some hours by an enema of tannin. During the forenoon fell in heavy naps and snoring stertorously. Milk toddy, beef-tea, acid. nit. gtt. j, in each draught of beef-tea.

10*th*. Pulse 130; general appearance improved, though he is still very low. Supporting treatment. P.M. R.—Pil. hyd. gr. v.

11*th*. No evacuation since 3 P.M. yesterday. The enema of

tannic acid has been repeated several times. Continue beef-tea and nitric acid, with other nourishment.

12*th.* Has diarrhœa again to-day, but was promptly checked by enema and epiates. Passed the night pretty comfortably.

13*th.* Pulse 100, and whole appearance indicating an improved condition of the patient, bowels loose; gave an enema after each evacuation.

16*th.* The patient remained about same up to this evening, when he discharged a quantity of coagulated blood from the bowels, and a general hemorrhagic disposition prevails. Continue to use nourishing and supporting aliments and stimulants.

24*th.* The patient continued in this debilitated and uncertain condition until to-day; there now seems to be a decided improvement; pulse 100, stronger and fuller. Continue same line of treatment.

27*th.* Convalescent. Continue treatment.

Case VII. V., midshipman, age 15, born in California, was admitted April 30, complaining of sharp pain in the side, pleuritic in character; has had his feet wet; dry cups to side, all bleeding, either local or general, being contraindicated. Apply a blister 6 in. by 6 in. over seat of pain. R.—Potass. et antim. tartrat. gr. ¼, every third hour.

May 1. Febrile movement moderate. Dress blister; ecchymotic spots upon legs and arms. R.—Spts. æther. nit. f℥j, ter in die.

4*th.* Up to yesterday has had fever at intervals, but to-day it has been constant; no delirium. R.—Quiniæ sulph. gr. iij, bis in die, pulv. Doveri gr. viij, hora somni. No pain; the sputa tinged with blood. Continue quinia, effervescing draught, spts. æth. nit.

5*th.* But little blood in sputa; little cough; pulse weak; complains of sharp pain at a certain point on the œsophagus, which makes him averse to swallowing. Suspend all medicine; give nourishing food in small quantities at a time, and frequently.

6*th.* Swallows more easily. Continue diet.

7*th.* Improved a little; pulse 60, and peculiar, with long intermissions; the pneumonia, of which there were physical signs, has yielded to the treatment pursued; little fever. Add to each draught of the beef-tea acid. nitric. gtt. j.

10*th.* Less difficulty in swallowing; no fever; ecchymotic spots gone; little or no cough. Continue medicines.

14*th.* Up and out of doors; has been taking following formula: R.—Quiniæ sulph. gr. xvi; tr. gentianæ comp. f℥j; aquæ f℥iij.—M. A tablespoonful every third hour.

Causes of the Fever.—It was suggested a long time ago, by some of the New England physicians, that spotted fever resulted from the use of spurred rye, but this opinion was manifestly untenable, inasmuch as the disease prevailed among those against whom no such a cause could be operating. In a short time it became a settled opinion that its prevalence, like other epidemics, depended upon a peculiar state of the atmosphere, and the pre-disposition of the people being favorable to its operation. Yet they recognized as exciting causes intemperance, exposure to cold and wet, fatigue, anxiety of mind, and fears. So great is the latter an exciting cause, that Thacher remarks, "that the most fatal consequences have been known to result from the influence of horror and fear. The terrific name spotted fever, or cold plague, its well known fatality, the tolling of bells, its frightful visage, the weeds of mourning, and the tears of sorrow, wonderfully conspire to induce a morbid state of the system favorable to the reception of the disease, and tend more immediately, perhaps, than any other causes to multiply the instance of mortality." The disease is recognized by all *not to be contagious*, and the epidemic at Newport showed not the slightest disposition to spread.

Its Duration.—In some cases the disease produces death in five or six hours, in others runs on for three or four weeks before a fatal termination. Case III. appeared to have died after seeming convalescence had been established. The greatest number die on the third and fourth days. In mild cases convalescence may be established on the third day, and, indeed, some extremely bad ones mend rapidly from that period. Dr. Miner states that in many of those cases which were neglected or treated with evacuants, a peculiar and usually irreparable sinking and exhaustion occurred on the third, fifth, or more commonly on the seventh day.

Age and Sex.—All classes, sexes, and ages, from one year to seventy, are its indiscriminate victims, though I am unable to find any reliable statistical matter bearing upon these points, in the works of those who have generally made these statements; indeed, we are led to believe that the rich and the poor, those living in sparely inhabited districts, and those in towns and cities; those in densely crowded houses, and those in large, airy mansions, were alike subjects of the disease. Locality may have some influence upon it, for in the early epidemics the disease affected more particularly and more fatally the inland towns of New England, while those on the sea coast escaped, or had it in some milder form.

Mortality.—In New England the horror of the ravages of yellow fever had scarcely abated before spotted fever made its appearance, and was not less malignant and deadly than its predecessor. Prevailing more or less extensively in the interior of the country, and on the seaboard during the cold and damp months of winter and spring, this fever in some places on its first appearance was fatal to more than half those attacked; in other seasons and places the mortality was less, and under favorable circumstances only one in thirty or forty died. In Newport more than half died, and in Philadelphia and its environing towns, one out of every four or five cases proved fatal.

It appears that the mode of treatment has a vast deal to do with the result of this disease, for Dr. Miner mentions that two physicians, in the year 1823, had charge of 360 cases, of whom only twelve died, six adults and six children.

However, the mortality of the disease will vary with the season and locality, and observe the law of other epidemics in being more fatal at the beginning than at the latter periods of its epidemic occurrence. We might add this additional reason, when so much depends upon the prompt and energetic treatment of the fever, of its greater mortality during last winter than during the winter of 1823, the want of a sufficient acquaintance with its nature and treatment by the present generation of physicians, for to them it was a new disease, an unknown emanation from the box of Pandora.

Anatomical Lesions.—Unlike some of the essential fevers, this affection does not present any characteristic lesions, but simply such as result from an *altered integrity of the blood*, characterized by a disposition to escape from its vessels. In those cases examined from 1813 to 1816, the brain and its meninges were always found congested, effusion of serum into the ventricles and subarachnoid spaces. One author states he met with coagulable lymph in the lateral ventricles. Changes in the heart, pericardium, lungs, and pleuræ, indicating generally passive congestions, subserous effusions of blood in patches of small extent, occasionally inflammation. The stomach showed submucous spots of the same character, and contained black vomit or such fluid as noted in Case III. No autopsic examinations were had in the Newport cases, and thus much valuable information was lost. It might be well to observe here, that the medical officer in the Navy has much opposition to encounter in the pursuit of *post mortem* investigations, springing, in many cases, from deplorable superstition on the part of the sailor, and not unfrequently from the prejudices and narrow-minded develop-

ments of officers, more particularly those of the old school, whose travel and experience would seem to have circumscribed instead of expanding their liberality and common sense.

Diagnosis.—When this disease first broke out on the practice-ship Constitution, the first case caused some speculation and surmise as to its nature, but the correct diagnosis was readily arrived at in the second case. Dr. Miner truly observes, that "there may be with the inexperienced some hesitation as to the nature and name of the complaint; but upon the whole there is less liability to mistake than in the diagnosis of any other acute fever with which we are in the habit of meeting in the ordinary course of practice. Dysentery, cholera, cynanche, catarrh, cough, pneumonia, measles, rheumatism, gout, and even common typhus are often complicated with it; yet there is always some prominent symptom by which it may be determined when the general affection is that of typhus syncopalis" (spotted fever.)

The suddenness of its attacks, the prominent severe headache and pain in the limbs, from the very beginning, with delirium, stupor, and coma, and the occurrence in two or three days of an eruption, mark it at once as peculiar and distinct from the few diseases with which it could only be possible to mistake it. The countenance is expressive of extreme suffering and anxiety, and in some cases of a dull, sallow hue, quite characteristic. It will be seen that in some of the cases above detailed, soreness of the throat was a prominent symptom, and this might lead one in the beginning of the affection to prognosticate scarlet fever, but the latter has an altogether different course, with an exanthem quite distinct from the ecchymoses of spotted fever.

Dr. Palmer was inclined to regard his first case as typhoid fever, but the rapid course of the disease, the early and peculiar eruption upon the skin, and general character of the delirium, so different from typhoid, led him to correct his diagnosis to petechial fever immediately.

I heard of a medical gentleman who felt quite sure the first case of spotted fever, that came under his care, was one of small-pox.

Prognosis.—The prognosis in this malady should always be guarded, and its epidemic character as to malignancy, and its secondary complications always kept in view. From the histories of the New England epidemics it appears that in those seasons when the disease showed grave cerebral complications more prominently, the prognosis was bad, and, on the other hand, it was more promising when only the organs of the chest

and abdomen seemed to bear the brunt of the attack. In the first class of cases some of the patients were comatose almost from the very inception of the fever, and required speedy and active treatment to afford them even a chance of life. Miner describes a peculiar kind of thoracic functional derangement, irregular in character, "the inspiration occurring only at intervals of several seconds, and being usually long and full, while the expirations were so short that the breath was parted with instantaneously. This condition, in combination with sinking, was often the first warning of danger in the insidious cases, and it was almost invariably irremediable."

Those patients who escape to the third or fourth day, with proper treatment, have encouraging chances of recovery.

Treatment.—In the treatment of this disease most all experienced physicians avoid blood-letting, and some condemn it in all cases. Dr. Page says that in the year 1816 he attended 220 cases of spotted fever, and bled but once to the extent of 8 or 10 ounces—a robust man, and even it might, in this instance, have been avoided. Dr. Miner holds nearly the same language, and states, "it should be observed as a rule to avoid anything that might *tend to waste the vital powers.* Evacuations, if copious, invariably render the mild cases severe, and the severe ones fatal. Probably more than three-quarters of the fatal cases were the consequence of spontaneous or factitious purging or vomiting."

Not one of the Newport cases could have been bled without dangerous, if not fatal, results

Purgatives.—All energetic purgatives are likewise condemned, and one of the authors who has given the clearest account of the therapeutics of this disease, objects to the use of these medicines altogether until after the third day, when the mildest of them may be employed, as castor oil, rhubarb, &c., and along with a host of other practitioners, speaks highly of an injection of milk, salt, and sugar. Some patients were known to have died while under the operation of a dose of calomel and jalap.

Emetics.—Emetics of ipecac and sulphate of copper engaged the confidence of most practitioners when there was "a foul state of the stomach."

Epispastics.—This class of remedies always ranked high as therapeutical means in the treatment of this malady, and were always ordered early in the disease, and as near the part most affected as possible; and in order to obtain these speedy good effects, the skin should first be excited by friction with strong tincture of cantharides—"so highly beneficial are these effects,"

says Dr. Thacher, "that blisters ought to be applied in succession to the head and chest until the most effectual relief be obtained. In every case of considerable violence the head should be immediately shaved, and cold water and vinegar applied, while the back of the neck and temples are vesicated."

Opium.—Dr. Miner speaks of this drug as almost a specific, and I cannot do better than quote his own language: "A few cases imperiously required half an ounce of the tincture of opium in an hour, or half a drachm in substance in the course of twelve hours, before urgent symptoms could be controlled; and even some cases required a drachm in the same time. *All those patients whose symptoms were promptly met with opium invariably recovered.*"

Arsenic, in the form of Fowler's solution, acquired throughout New England, where the disease most prevailed, considerable reputation, and the most experienced physicians agreed in their expressions of confidence in its superior efficacy. The dose recommended was four to six drops every four or six hours, until its effects upon the system became evident by a peculiar sensation about the eyes.

Strychnia.—Dr. James C. Palmer, U.S.N., used, as he believes with great advantage, strychnia, beginning with the article early in the disease, and it will be seen that most of the cases above detailed were thus treated. Care should be taken that we should not confound the tetanic movements, a phenomenon of the disease, with those, the result of strychnia. I am inclined to think that the good effects attributable to that drug in the above cases resulted more from the quinia used in combination with it, and the stimulants employed at the same time.

Stimulants.—We come now to the most important class of remedies in the treatment of spotted fever, and those which bring us unmistakably immediately good results, saving patients from certain and impending collapse. Stimulants are applied in the usual manner externally, hot bricks, bags of sand, hot foot-baths, &c., billets of wood heated and applied to different parts of the patient's body placed between blankets. Frictions of the whole body with sweet oil have been highly recommended.

Among the milder internal stimulants we have hot tees made of sage, origanum, pennyroyal, peppermint, and the dwarf yew; more active than these, the volatile oils, particularly the oil of turpentine, both by the stomach and rectum.

Brandy and camphor form an excellent combination. Dr. Hall relates the case of a young married lady who was attacked

by spotted fever after her first lying-in, and had mild delirium, which soon rose to the most violent fit of distraction, with supervening coma. In one hour 40 grains of camphor, and 180 drops of laudanum were given to her; and in the following three hours she took 400 drops more, a bottle of Madeira wine, and some brandy; immediately after which she began to mend, and gradually recovered, contrary to the expectations of all her friends. In another case, where coma had set in, he gave in six hours 500 drops of laudanum with a quart of wine, and nearly as much brandy; the patient recovered.

Quinia and bark were almost always administered towards the end of the disease, and followed up, when convalescence was established, by beef, mutton, and chicken.

I cannot do better than finish this summary of treatment by the observation of Dr. Hall: "That no disease requires more careful nursing, and perhaps none is more liable to relapses, and when severe relapses do occur, they are frequently dangerous, and often fatal; but are to be treated as new cases."

ON THE BRAIN OF A BUSHWOMAN.

By JOHN MARSHALL, F.R.S., Surgeon to University College Hospital.

The Bushwoman was aged, and about 5 feet high—unusual for her race.

The form of cranium is a long narrow ovoid—less dolichocephalic, however, than the negro skull; the face is high-cheeked, and the nose very small and flattened. The frontal sinuses are absent, and the walls of the cranium are thick—so thick that its internal capacity is less than would be expected from its outward form and size, being equal to 35 oz. av. of water, or 60.64 cubic inches, which, for the height of the Bushwoman's body, is decidedly, but not very small.

The actual weight of the preserved encephalon proved to be 21.77 oz. av., which would probably represent, as the author shows, 31.5 oz. for the weight of the recent brain enclosed in its membranes. Allowance being made for the height of the body, this is less by 8.5 oz. than the average weight of the brains of European females of the same age, as estimated from the Tables of Dr. Boyd, published in the Philosophical Transactions for 1861.

The cerebrum proper probably weighed, in its recent state,

27.25 oz., the cerebellum 3.45 oz., and the pons with the medulla oblongata .8 oz.

The ratio of the cerebrum to the cerebellum was as usual, 7.7 to 1; that of the cerebrum to the body was probably as 1 to 52, and that of the cerebellum to the body as 1 to 418, instead of the usual ratios of 1 to 41, and 1 to 328.

An examination of the general form of the cerebrum shows that it is small, but long—defective in width, and especially in height. Its outlines and surfaces are angular and flat, instead of rounded and full. The frontal region is very narrow, shallow, much excavated below, and compressed latterally near the entrance of the Sylvian fissure. The parietal region is low, but prominent latterally; the occipital region is long, but defective in height; and the temporal region is long, but narrow.

The cerebrum overlaps the cerebellum by .5 inch, which is as great an absolute overlap as is usual in European brains, but less relatively to the length of the brain, which is very long in the Bushwoman.

The fissures, lobes, and convolutions are then described at length, and compared with those of the ordinary European brain, with those of the Hottentot Venus's brain figured by Gratiolet, and with those of the young Chimpanzee. It is impossible to give in an abstract even an outline of the facts recorded in this part of the paper.

The general result of the inquiry is to show that the fissures are rather more complex than in the brain of the Hottentot Venus, but much less so than in the European. They are rather more complex on the left than on the right side of the brain. They are widely separated from those of the Ape's brain.

The author concludes—1. That all the convolutions proper to man are present, but, as compared with the European brain, are much more simple, and less marked with secondary sulci. The greatest deficiency is in the occipital and orbital convolutions.

2. That the convolutions, taken generally, are rather more complex than those represented in Gratiolet's figure of the Hottentot Venus's brain, which may be partly due to the obliteration of details in the latter during its long period of preservation.

3 & 4. That the resemblance between the Bushwoman's brain and the Hottentot Venus's brain is sufficient to justify the conclusion that the latter was not an idiot, or a defectively developed individual; but both brains, as compared with the European, have an infantile simplicity, characteristic partly of sex, but chiefly of race.

5. That the convolutions being more simple, can be more easily traced and compared on the two sides than usual, but still show abundant evidences of the asymmetry characteristic of man.

6. That there is a greater difference between the Bushwoman's cerebrum and the highest Ape's cerebrum than between it and the European cerebrum; but a less specific difference between it and the European than between the Chimpanzee and the Orang; and, of course, much less than between the highest and lowest Quadrumanous brains. There is, however, less difference between the Bushwoman and the highest Ape than between the latter and the lowest Quadrumanous animal.

7. The general results, the author thinks, justify the expectation that characteristic differences of degree of cerebral development may hereafter be found in the several leading races of mankind.

The author then proceeds to describe the color and relative proportions of the grey and white substance, the commissures, ventricles, and ganglionic masses.

The commissural fibres of the corpus callosum are very deficient in the Bushwoman; and the other commissures are also small. The body and anterior cornu of the lateral ventricle are also small; but the potserior cornu and its contained parts are very large.

In the cerebellum, the median parts appear to be somewhat less developed than the hemispheres. Its transverse commissural fibres are more largely developed than the same system of fibres in the European brain; the Chimpanzee standing, in this respect, still lower. The laminæ of the cerebellum are even more numerous than in the European specimen with which the Bushwoman's brain was compared. The cerebellum seems to be more perfectly developed than the cerebrum.—*Boston Medical and Surgical Journal.*

DISEASE TERMED "BLACK LEG," AMONG THE OTTAWA LUMBERMEN.

Dr. J. O. Grant describes (*Med. Times and Gaz.*, Dec. 26, 1863) a disease of this name prevalent among Ottawa lumbermen.

"In one shanty," he states, "twenty-five men out of thirty-six were attacked with this disease, and, from ascertained facts, the great proportion of the cases were developed as follows:—

Slight pains in the extremities, particularly about the ankle joints and posterior parts of the legs. After a few days, in severe cases, the pain is liable to extend to the arms and shoulder joints. The integument of the legs is first observed to change color, passing from a somewhat yellow to a deep venous hue, in large patches, almost approaching to a black (hence the term.) The legs and the arms are liable to swell, particularly the former. Frequently, two or three weeks before any constant pain is complained of, or change of color takes place, the limbs move sluggishly in response to the will, and considerable soreness is experienced upon pressure. Abrasion of the integument is followed by a sero-sanguinolent discharge; and, if much irritated, is liable to inflammation, partaking of the asthenic character. The limbs are said to be almost free from pain when immersed in water during the spring season rafting; but afterwards they become hard, painful, and stiff. The gums are frequently observed swollen and spongy for some weeks before the limbs become painful. Bowels usually regular, and urine voided in normal quantity. Sleep restless. Many of the men were subject to headache, giddiness, loss of appetite, and swelling of the eyelids; also, at times, to a peculiar sensation, as if the head had attained enormous dimensions. During the month of April the great proportion of these cases became most marked, and, under judicious treatment, rarely extended over a period of four weeks before convalescence was established. It was not an unfrequent circumstance to observe, amongst those who were exposed to the same dietary influence, attacks of acute rheumatism, as well as nyctalopia, both of which readily yielded to rest and regimen, in conjunction with mild medicinal agents. Whenever nyctalopia is detected by the experienced lumberer, fresh milk is administered largely, when obtainable, which has a most speedy and salutary influence, the retina recovering its tone in the space of a few days.

"This disease, from its particulars, appears to class with scorbutus, being from all appearances an aggravated variety, resulting not alone from a sameness of diet, but also from the influence of nitrate of potash upon the blood. This salt is largely used by the packers to preserve the pork in the summer season. During the early lumbering operations, twenty-five or thirty years ago, on the rivers Ottawa and Gatineau, the occurrence of this disease was very frequent, owing in a great measure to the extensive use of this salt of potash. The trade and experienced packers, being aware of these facts, now have recourse to this material only in moderation, an excess not being

necessary to prevent putrefaction taking place, in consequence of which this disease is now seldom observed. Dr. Garrold states (*Monthly Journal of Medical Science*, January, 1848), that from an examination of the composition of the food, etc., etc., he was led to the conclusion that the absence of potash was the cause of scurvy. Notwithstanding the accuracy of these observations, it is a fact well tested through a process of years, that when any excess of nitrate of potash is used to preserve the staple article of diet, pork, this scorbutic black leg is liable to be developed."

INTERNAL ADMINISTRATION OF BELLADONNA IN CASES OF SEVERE BURN.

Experimental physiologists hāve recommended belladonna for use in the treatment of burns, in the belief that it diminishes that state of the nervous functions under which reflex inflammations are likely to be originated. They assert, on the other hand, that of all remedies opium is the one most powerful in increasing this peculiar state, and that it ought consequently to be avoided. In clinical practice, however, we believe that this opinion is wholly disregarded, and that opium is the form of anodyne most commonly resorted to in these cases. Yet it is generally suspected that the causes of death after burns are, in a majority of instances, connected with reflex inflammations, *e. g.*, ulcers of the intestine, pneumonia, &c. In a series of cases under Mr. Hutchinson's care in the London Hospital during the last six months, the belladonna treatment has been tried. In some remarks at the bedside of a patient the other day, Mr. Hutchinson stated that he considered the general results to have been fairly satisfactory. He adverted to the extreme difficulty of forming ā trustworthy conclusion on such a matter, since these cases are, in their nature, never stationary, but always tend either to improvement or the reverse, and often with great rapidity. If, therefore, the remedy were commenced when the patient was very ill, it might chance to be just at the time when the improvement was about to set in; and if, on the other hand, the patient got worse, it might fairly be alleged that the remedy was used too late. If, on the other hand, we should give it in cases in which, as yet, no serious symptoms had appeared, we might again be much led astray, since a great majority of burn cases do well without any special plan of medication. Mr. Hutchinson stated that the cases in which the remedy had

seemed to be most useful, were those of children in whom general febrile symptoms, attended with restlessness, loss of appetite, &c., had set in without any local complications. In several of these, there could be no mistake that the feverish state had passed away quickly and very satisfactorily under the use of belladonna. In no cases had he witnessed any ill results. If the burn itself was very painful, and the patient unable to get sleep on account of the pain, then the belladonna seemed comparatively inefficacious to procure ease, and morphia was far more efficient. As a rule, no opium had been given to the cases treated by belladonna; but in a few, and those chiefly in adults, it had been found requisite to give an occasional night dose. Possibly more benefit might have been obtained had the administration of the belladonna been pushed to larger doses. The usual dose given had been a third of a grain three times a day. In speaking of the less frequent results of burns, Mr. Hutchinson mentioned a recent case in which acute inflammation of one hip-joint, followed rapidly by dislocation, had occurred in a child who had been severely burnt on the arm and chest. He was in doubt whether to regard it as a reflex inflammation, or as a consequence of pyæmia.—*Med. Times and Gazette, Jan.* 2, 1864.

SARRACENIA PURPUREA IN VARIOLA.

By NOAH C. LEVINGS, M.D., of New York.

During the last month (January), I had the fortune to have under my care four children, in one family, sick with variola. Considering this to be an unusually favorable opportunity to decide upon the merits of the sarracenia as a "specific" for this disease (the children never having been vaccinated), I obtained the contused root of the sarracenia purpurea direct from Major Lane, of Halifax, the putative father of the "specific." I also requested Dr. Jacobi, of this city, to see the cases until their termination, independently of myself, and then to give me his opinion on the remedy.

The following is the history of the cases:—The first one, a boy, three years of age, unvaccinated, commenced, Tuesday morning, Jan. 12th, to complain with the usual symptoms of variola. On Thursday, the third day, the eruption appeared. We concluded to allow the disease to get under full head before commencing the use of the "specific." So, upon Monday at

ternoon, the infusion of sarracenia purpurea, an ounce to the pint, was given according to published directions, that being the fifth day of the eruption, which was now distinctly pustular. The following afternoon, twenty-four hours after commencing the remedy, there was *no* increased flow of urine, no flattening nor shrivelling of the pustules, as we expected. Wednesday, the seventh day, no change in the symptoms or eruption, except a lessened fever, fuller pustules, and the central depression more positive. The eighth day, of course, the pustules began to scab, and some to break and crust. By the tenth day one-half the scabs on the face had fallen off; but on the trunk and limbs the peculiar pustules were advancing through their usual course without at all being modified by the medicine.

The second case, a boy of eight years, unvaccinated, taking the disease three days later than his brother, went through exactly the course of unmodified small-pox.

We have the same history for the third case, an infant of seven months, the eruption being preceded by convulsions, and no modification of the disease or symptoms, though administering the medicine from the commencement.

In each of these three cases the pustules went through the invariable course, being on the trunk three, and on the limbs six days later than on the face.

The fourth case, a sister of the others, ten years old, whom I vaccinated, the vaccination taking the precedent of the variola by two days, was changed to a very mild case of varioloid, having but eight or ten pustules on the face. This one was about the house each day, and had no medicine.

Presuming to know the natural course of variola, and having three cases neither modified, nor the sequence of the symptoms altered by the free use of the infusion of sarracenia purpurea, Dr. Jacobi and myself consider the sarracenia as without any medicinal virtue whatever in shortening the period of varialo, or "causing the pustules to wither or fall off" before the eighth day.

Drought in the West Indies.—A drought of more than twelve months' duration in the West Indies has caused much suffering and disease to the inhabitants; no rain having fallen in Guadaloupe and other islands of the Antilles since August 16th, 1862. The mortality among the white population has been very great.

Editorial.

Illinois State Medical Society.—The next regular Annual Meeting of the Illinois State Medical Society will be held in Chicago, commencing on the first Tuesday of May next. We anticipate a full attendance and profitable meeting on that occasion.

Chicago Medical College Commencement.—The Fifth Annual Commencement of the Chicago Medical College—Medical Department of Lind University—will be held on the evening of the first Tuesday in March next.

Books and Pamphlets.—Several of both have been received, and will be duly noticed in our next number.

Sarracenia Purpurea in Small-Pox.—In another part of this number we publish the result of the experience of Dr. N. C. Levings, in the use of this article. We have also used it in several cases. In the majority of them we could not perceive that it had any effect whatever. In one case, of a young man who supposed he had been well protected by vaccination, but on whom the variolous eruption made its appearance so thick as to indicate a severe form of the disease, we gave the infusion of the Sarracenia freely, and the entire eruption proved abortive, drying up completely about the fifth day without suppurating. No doubt such occurrences have been noticed by others, even where the Sarracenia has not been used, and hence they must be regarded as purely accidental.

Commencement in Rush Medical College.—The commencement exercises of the twenty-first annual course of lectures in Rush Medical College were held on Wednesday evening, the 27th ult., on which occasion seventy-nine gentlemen received the Degree of Doctor of Medicine. Prof. Brainard, President of the Faculty, conferred the degrees, presenting each graduate with his diploma.—*Chicago Medical Journal.*

Statistics of Mortality in Chicago.—As some of our readers may have seen the pretended tables of mortality published in the daily papers of this city once a month, we insert the following communication, sent by the Chicago Medical Society to the Mayor and Council, for the purpose of relieving the profession of the city from any responsibility for the imperfections and absurdities of these tables. The communication was received in the Council and referred to the Judiciary Committee, with a fair prospect of having better regulations for the future:—

To the Mayor and Council of Chicago:—

The Chicago Medical Society would respectfully call your attention to the defective method of obtaining and recording the statistics of mortality in this city, which has been adopted for several years past.

It is justly considered one of the most important duties of every municipal government to ascertain and remove, as far as practicable, all causes of disease and death in the community under its jurisdiction.

In the work of ferreting out the causes of disease in any given city or community, a correct record of mortality, setting forth the age, sex, nativity, and place of residence, with the immediate cause of death in each case, is indispensably necessary. Such a record in this city would enable the medical faculty and the Health Department to determine at all times, not only the total number of deaths, but the precise streets and wards in which they occurred, the class of people suffering most, and the nature of the diseases giving rise to the mortality. These facts being ascertained, a comparison of the sanitary condition of the streets and wards furnishing the highest ratio of mortality with that of the more healthy districts, would quickly show the causes acting injuriously upon the health of the people, and how far they were capable of removal.

For the purpose of furnishing such a record of mortality as we have here suggested, the framers of the present city charter and ordinances made the following provisions, viz.:—

"Sec. 12. It shall be the duty of the City Sexton to keep a record of all interments which may be made in the city: stating the name, age, and disease, or other cause, and date of death, the *Division* in which the deceased resided, and when practicable, the place of birth. A transcript of said record shall be

filed by the Sexton in the City Clerk's office for record, at least once a month; and when required, he shall cause the same to be published.

"SEC. 13. For the more effectual execution of the foregoing section, it shall be the duty of the attending physician, on the demise of his patient, to grant a certificate to the sexton in attendance, on application, setting forth the particulars above specified. Said certificate shall be delivered previous to interment, to the City Sexton by the sexton in attendance. And in all cases where no physician shall have been in attendance, or where the attending physician shall neglect or refuse to grant such certificate, or cannot be found, it shall be the duty of the sexton to ascertain and report in writing to the City Sexton, previous to interment, the several particulars aforesaid, and the name of any physician who shall refuse or neglect to grant said certificate. If any sexton or physician shall fail to comply with any provision hereof, he shall be subject to a penalty of five dollars for every offence. Every person shall be deemed a sexton who shall officiate as such at any funeral. The City Sexton is hereby authorized to procure suitable blanks for the use of physicians and sextons, and furnish the same gratis."

With one exception, these provisions are sufficient, if correctly executed according to their plain intent and meaning, for all the purposes desired. The exception to which we allude, has reference to the locality of each death. The law as it now stands requires only the specification of the "Division" of the city in which it occurred. With the present extended limits of the city this is too vague to be of any practical utility. Every certificate of death should state the street and number, or if no number exists, the street with the name of the nearest street crossing it. Such an amendment would enable the Health Officer at all times to determine the precise district or neighborhood in which any unusual mortality was occurring.

Knowing fully the paramount importance of this subject, to the welfare and prosperity of the city, we earnestly ask your attention to the amendment here proposed, and then to a rigid and faithful enforcement of all the provisions of the law. The record of mortality as it has been kept in this city for five or six years past, is entirely worthless, except in relation to the gross mortality of the city. We are aware that for some time past a tabulated monthly statement has been published, pretending to set forth not only the gross mortality for the month, but also the causes of death. The undertakers and sextons, instead of procuring reliable certificates, in accordance with the law,

from the attending physicians, simply gather from the family or neighbors some pretended cause of death, insert it in the certificate themselves, and return it for registry. So true is this that not a single member of this Society has been called on for a certificate of death twice a year for the last five years. Of course certificates made up in the manner here indicated are mere inventions; and the tabular statements founded on them and published, are so grossly absurd as to be a disgrace to the Health Department of the city. That we do not exaggerate will be apparent by a reference to any of the published tables. Take, for instance, the most recent statement, which professes to include the causes of death for the year 1863. There we have six deaths ascribed to "abscess;" but in what part of the body is not stated. Thirty-four are ascribed to "accident;" yet further along in the table, twenty-nine more are recorded as having been "killed," and fifty-five "drowned." Forty-four are said to have died of "decline;" but, whether this means that they died because they "*declined*" to live any longer, or because they had consumption, it is not possible to determine. Seven died of "fever," and twenty-one of "fits," but what kind of *fever* or *fits* is not stated. Seven died from "lung disease," five because they were "*nervous*," one hundred and eighty-six from "teething," &c., &c. It is needless to repeat that such tables are not only valueless, but they are subjects of jest and ridicule, both at home and abroad. The faults of these tables are not to be ascribed to the Health Officer, who nominally reports them, but to the sextons who *manufacture* certificates of death, instead of procuring them from physicians, as the law requires. To correct the evils and negligence so manifest in this important department of our city affairs, we earnestly ask your attention to the following propositions:—

1st. Amend section 12 of revised ordinances, relating to the Health Department, by striking out the word "division," and inseting in its place the words "street, number, and ward."

2d. Adopt such measures as will insure the faithful execution of all the provisions of the law in relation to the procurement of proper certificates, their prompt return to the proper officer, and their regular tabulation and publication.

N. S. Davis, *Chairman of Committee.*

The Chair of Chemistry at Berlin, also that at Bonn, have been offered to Dr. Hoffman, of London. The University of Bonn propose to place £20,000 at his disposal for the establishment of a laboratory.

STATE BOARD OF EXAMINERS FOR THE DEGREE OF DOCTOR IN MEDICINE.

We are gratified to see that the initiative in this measure has been taken by the Faculty of the Buffalo Medical College, and most earnestly hope it may cause the adoption, in tangible form, of the measure, which if carried out will do more for the elevation of the profession than any other reform which could be suggested.

At the Annual Meeting of the New York State Medical Society, now being held in Albany, the following was presented, and on motion adopted:—

UNIVERSITY OF BUFFALO, MEDICAL DEPARTMENT.

On motion of Prof. Chas. A. Lee, seconded by Prof. James P. White, it was

Resolved, That the New York State Medical Society be requested to appoint a committee to consider the expediency of, and to report a plan for, the appointment of a State Board of Examiners for the degree of Doctor of Medicine, and to report at the next meeting of the Society.

Resolved, That the same committee be instructed to bring the subject before the next meeting of the American Medical Association, and that the delegates of this Society be instructed to urge the general adoption of the same plan in other States of the Union. Carried unanimously.

THOS. F. ROCHESTER, *Chairman.*

SANFORD EASTMAN, *Dean of the Faculty.*

Buffalo, Feb. 2d, 1863.

This is certainly an effort in the right direction, and is exceedingly creditable to the institution suggesting it. When the graduation of students in medicine is wholly separated from the duty of teaching, and an impartial Board of Examiners shall decide who shall, and who shall not receive the degree of Doctor in Medicine, very much will be accomplished for the elevation and advancement of the profession. It is striking at the very root of a great evil, and will meet with opposition; indeed, we have no doubt it will be overwhelmed in the almost unanimous opposition which it will meet from the various institutions now empowered to grant diplomas. It is a measure that Medical Colleges, as such, cannot at present afford to favor, though the Professors are more fully sensible of its importance than any other individuals. There is no doubt that an impartial Board of Examiners would reject, as unprepared for the

duties of the medical profession, from one-quarter to one-third of the young men who, under the present system of graduation, are yearly admitted to the practice of medicine. This we believe to be true, and to be more or less applicable to all places in this country where young men are taught the primary branches of medical knowledge, and graduate, after "three years' study, and two full courses of lectures, the last at this institution." The State Examiners should receive compensation only from the State; should be disconnected from all schools of instruction; should, in a word, be wholly impartial.

It has been claimed that the same was accomplished by the appointment of Curators, who are invited to *attend* the examination of the students and vote upon their qualifications; and this does *appear* quite satisfactory, while in reality it accomplishes nothing. Whoever notices the manner of these appointments, the terms of this service, and the opportunity afforded to determine the respective merits of individuals, will readily discover that in this way the feeblest protection is afforded the open doors of our profession, which should be guarded by ever faithful janitors.

We understand, also, that this plan of appointing State Examiners has been considerably perfected by the Institution suggesting it, and that the details will be urged upon the consideration of the State Society at its present meeting. It appears that the Buffalo Medical College are in earnest in advocating this measure. The competition in medical schools and the desire to obtain large classes, has had prejudicial influence upon the standard of medical education, and so great has this evil become, that it is quite time for commencing a reform. Young men have been encouraged to pursue the study of medicine without preliminary preparation, and graduated without respectable professional attainment, thus lowering the professional standard, and making the degree of Doctor in Medicine a disgrace, rather than an honor. If this reform, now suggested and urged upon the profession by the Medical College in Buffalo, is favored by the other colleges in the State, we shall soon be redeemed from the power and influence of a system which has disgraced the profession, lowered its standard of attainment, reflected obloquy and contempt upon its degree, and come well nigh reducing medicine, as learned and practiced, "to the level of a trade."

It may be thought that we draw this matter in rather high colors, but the revelations of modern investigation leave no doubt that a poor doctor is vastly worse than none at all. I say revelations of modern investigation, for it was formerly be-

lieved that any one who could give some medicine was useful in the absence of a physician; but it has been reserved for the physicians of our day to discover, and for the people of our times, in any measure to perceive, that medicine, *per se*, is poison, and useful only when applied under the direction of an honest, educated, intelligent physician. We sincerely hope the profession will see to it that no other than such are hereafter admitted to its ranks.—*Buffalo Medical Journal.*

We copy the above from the *Buffalo Medical and Surgical Journal*, for the purpose of giving it our cordial and earnest approval. The establishment of an efficient Board of Medical Examiners in each State, by whom all candidates should be carefully and thoroughly examined, before they receive the degree of *Doctor of Medicine*, or can be admitted into the ranks of the profession, we have earnestly advocated, on all suitable occasions, since 1840. Some of the phraseology used by the editor of the *Buffalo Journal*, would lead the reader to infer, that this was the first time the subject had been introduced into the New York State Medical Society, and that the important proposition to separate the examining and licensing boards from the Medical Colleges, had originated with the Faculty of the Buffalo Medical College. Such an inference, however, would be entirely erroneous, as any one can ascertain by referring to the transactions of that Society from 1839 to 1845. It was in reference to this very subject, that the first call was issued for organizing the American Medical Association; and that organization will not have accomplished the most important object of its existence, until it shall have prompted the establishment of an independent and efficient Board of Examiners in each State, by which all candidates must be examined and approved, as the only means of getting access to the ranks of the Medical Profession.

In 1851, we published a small volume, entitled "History of Medical Education and Institutions in the United States," in which we gave our views concerning the whole subject of medical education without reserve, and, though we have been constantly connected with medical colleges since, we cannot now better express our sentiments concerning Boards of Examiners, than by quoting from that work as follows:—

"Hence, a thorough organization of the profession should be the first object of every advocate for medical improvement; and this organization should include—first, a board of censors, appointed by each local society, to examine all candidates for admission as students, in regard to their preliminary education; and no member of such societies should admit a student into his office without a certificate from said board, certifying that he is well versed in all the branches usually taught in our academical institutions, and possesses a good moral character. And second, one board in each State for the examination of all candidates for full admission into the ranks of the profession.

"This board should consist of, at least, seven members, appointed by the State Medical Society of each State; and, if advisable, also, one additional member, appointed by each regularly incorporated medical college; and the presence of two-thirds should constitute a quorum for the transaction of business. The board should meet at such time and place as the State Society should direct, and should not only require of each candidate the ordinary oral examination in the various branches of medical science, but also, the presentation of a written thesis on some medical subject, the detailed report of one or more cases, and the examination of at least one patient, in the presence of the board. The examination, and all the requirements, should be the same, whether the candidate possesses a diploma conferred by a medical college, or not. All who are found qualified should receive from the board diplomas, certifying to such qualifications, and entitling them to be recognized as members of the profession throughout the whole country; but without such diploma, no one should become eligible to membership in any society, or be countenanced or consulted with as practitioners. All fees derived from the granting of diplomas should be paid directly into the treasury of the State Society by which the examining board was appointed; and the members of such board should be paid a reasonable compensation for the time actually spent in the performance of their duties, as examiners, by the same society,—their bills, duly certified to, being presented to a regular meeting of the society, and audited in the same manner as provided for all other bills of expenditure.

"The advantages of such a plan, when carried into practical operation, are manifold:—

"1st. It would secure the practical adoption of a fair standard of preliminary education, which is as essential to the elevation and usefulness of the profession as is a knowledge of geography to the naturalist.

"2d. It would insure a more uniform, elevated, and practical standard of requirements for admission into the ranks of the profession; because the several State societies being directly connected with each other, through the medium of the National Association, would almost necessarily give to their several boards of censors similar rules and exactions.

"3d. It would place the responsibility of fixing the qualifications, and regulating the admission of members into the profession, where it rightfully and properly belongs, viz., with the mass of the profession itself.

"4th. It would tend greatly to elevate the character of medical teaching, both public and private, by making every teacher, and every faculty of teachers, depend entirely on their *merits* for success. Mere speculating associations, or sham corporations, would no longer be able to draw respectable classes of students by the cheapness of their diplomas, the liberality with which they are distributed, or the shortness of time required for college attendance; but the student, knowing that the success of his final examination must depend entirely on the amount and readiness of his medical knowledge, his mental discipline, and his moral character—uninfluenced by the fact that he has spent more or less time and money in this or that college, or the question, whether his approval or rejection will benefit or injure this or that institution—he will be governed, in his choice of teachers and colleges, by one simple question, viz.:—Where can I gain the *greatest amount* of sound medical knowledge for a given amount of time and money? With this question as the sole issue between the teacher or the college and the pupil, we should speedily have a radical change in the nature of the competition among our medical institutions. Instead of a struggle to outdo each other in placing the diploma in such a position, or on such terms, as to be most effectual in decoying students into their own halls, their competition would necessarily consist in an effort to excel in the number of their teachers, and the length and perfection of their courses, compared with their charges—a competition tending, necessarily, to progression and improvement, instead of the reverse, which now prevails. Indeed, nothing hangs as a heavier incubus on all attempts to improve our system of medical education, than this connection of licensing and teaching. It enables the merest shadow of a college, with its thirteen or fourteen weeks' lecture term, and perhaps two of these in one year, to issue diplomas just as large, couched in just as flourishing Latin, conferring just as many privileges, and, as the student well knows, having

just as much influence with the great mass of the community as the best, most thoroughly organized, and most rigid institution in the Union—hence, one of the strongest motives to real excellence in teaching is done away with, and the poorest college is given a decided advantage over the best.

"It is on this ground that I have, for several years, urged this separation, as a measure of real benefit to the colleges themselves, and as the only one which would ever enable the good institutions to reap the full benefit of their merits, in opposition to the badly managed and worthless. Indeed, the whole history of mankind, in all ages and countries, has not more clearly demonstrated the truth of any proposition than this—that every class of institutions, whether educational or industrial, not only flourish best, but are most progressive and improving in their condition, when left to depend entirely on their own merits for patronage and success.

"5th. It would insure both permanence and efficiency in the social organization. Those who study carefully the history of those medical societies and associations which have been formed, from time to time, in different States, will not fail to perceive that, with a very few exceptions, they have flourished for a few years only, and then maintained a nominal, rather than an active, state of existence. Thus, from 1810 to 1830, an active spirit of medical organization prevailed, resulting in the formation of State and County or District Societies, in a large majority of the States then existing in the Union. At first, many of these had Boards of Censors, whose fees, derived from the examination and licensing of students, not only defrayed their ordinary expenses, but, with a trifling iniatory tax, served to accumulate valuable society libraries, and the interest felt in their regular meetings continued unabated. But, as already shown in the historical part of our work, the college diploma rapidly superceded the State and county licenses, in all the States except, perhaps, Delaware and Louisiana, where a State license is still required by law.

"The societies being thus left to depend entirely on the voluntary contributions of the practitioner, who must tax himself to support the county society, spend his time, and tax himself again to pay traveling expenses, and to sustain the State organization, soon began to lose their interest, and fall into a state of inactivity. So true was this, that, though State and District Medical Societies had previously been formed in all the Eastern States—in New York, New Jersey, Delaware, Maryland, Mississippi, Alabama, Tennesse, Ohio, Indiana, and Michigan—

yet, in 1840, those in Massachusetts and New York were almost the only ones that maintained anything more than a mere nominal existence. And even in the latter State, out of its sixty counties, not more than sixteen or seventeen were represented in the meetings of the State Society. Since the successful organization of the American Medical Association, and the general interest which has been excited on the subject of medical education, a new and active spirit of social organization has been rekindled. Hence, during the last four years, most of the old societies have been re-animatod, and new ones have been formed in most of the States, where none existed before, such as Pennsylvania, South Carolina, Georgia, Illinois, Iowa, and Wisconsin. As proof of the present activity of this spirit, it is only necessary to mention, that over four hundred delegates were in attendance on each of the last two meetings of the American Medical Association, the one in Boston, the other in Cincinnati, and that many of these traveled more than a thousand miles, at their own expense, for that purpose. But does any one suppose that this spirit will continue year after year, under the influence of such personal sacrifices of time and money? It requires only an ordinary knowledge of human nature, and of the past history of medical associations, to see clearly that, without some collateral aid, some permanent resource for lightening the burthens and increasing the interest of such organizations, they will inevitably sink into a mere nominal existence, so soon as the exciting subjects which brought them into being cease to be the predominant topics of interest. But if each State organization could receive an annual income sufficient to defray its ordinary expenses, publish its transactions, and, perhaps, enable it to offer a premium for original essays, or defray the expense of original experimental investigations, it would not only insure the permanent prosperity of such organization, but it would prove one of the most powerful means of improving the whole literature and science of the profession.

"One of the primary objects I had in view when I presented the first series of resolutions in the New York State Medical Society, in 1844, advocating the separation of the licensing from the teaching power in our colleges, and investing it in State censors, was to put into the possession of the State Societies such an income, for precisely such a purpose. That this was a leading object, will be seen by a reference to the resolutions themselves, as published in the transactions of that Society.

"It will be seen by reference to the report of the committee on medical education, contained in the Transactions of the American Medical Association for 1849, that nearly fourteen hundred were admitted into the profession during the year previous, by receiving diplomas from the several medical colleges in our country. These, at twenty dollars each, gave those colleges no less than twenty-eight thousand dollars. Now, suppose this sum was annually received by boards of examiners, one for each State, and turned directly into the treasury of the State Societies, every reader will see that it would afford an ample fund for paying the examining boards, publishing the annual transactions of the several societies, and enable each to powerfully encourage original investigations by premiums or experimental committees; and who can calculate the beneficial results that would accrue to the whole profession by thus rendering its organizations permanent and prosperous, and maintaining an active and ever-increasing spirit of scientific inquiry? It may be said that the loss of this fund would, by crippling the colleges, injure the cause of medical education as much as it would advance it, in the manner proposed; but if we remember that there are about four thousand five hundred students annually in attendance on the several colleges, and that a matriculation fee of five dollars for each, after deducting five hundred as third course students, would give no less than twenty thousand dollars, besides the entire receipts for lecture fees, we shall be satisfied that these institutions would have no cause to complain. And even if such a course should cause a school, here and there, to close its doors, it is by no means certain that either the profession or the community would suffer thereby."

Such were our sentiments years ago, and such they are still. We are glad the representatives of the Buffalo Medical College in the New State Medical Society have, again, brought the subject to the notice of the Profession. We wish the Medical Society of this, and all the other States, would give the subject a thorough consideration, and so instruct their delegates to the American Medical Association, as to effect a uniform plan of action throughout the whole country.

Presidency of Guy's Hospital.—At a general court of the governors, held on Wednesday, the 16th ult., the Right Hon. Sir Lawrence Peel was unanimously elected president of the institution, in the room of the late Mr. Bonamy Dobree.

DEATH OF LEONIDAS M. LAWSON, M.D.

It is our sad duty once more to record the decease of one of our most prominent professional brothers. Dr. L. M. Lawson—late Prof. of the Theory and Practice of Medicine in the Medical College of Ohio—died at his residence in this city at one o'clock on Thursday morning, January 21st, at the early age of fifty-one.

Dr. Lawson was throughout his professional life identified with the interests of the profession of Cincinnati and medical teaching in our city, nevertheless he had occupied various positions of honor in neighboring cities at different periods of time. Very early in his career he was elected to a professorship in the medical department of Transylvania University at Lexington, Ky. Subsequently he held a professorship in Louisville for two or three winters, and for a single winter, (1859–60), he was Prof. of Clinical Medicine in the University of Louisiana at New Orleans. Still with these honorable appointments we find his heart regularly returning its best affections to this city of his early adoption. Here he has done his best work; here he has closed his labors.

In the spring of 1842, Dr. Lawson established the *Western Lancet*, and continued at its head, with various associates, until the winter of 1854–55, when his absence in Louisville made it necessary for him to withdraw from his editorial duties here. The subsequent merging of the *Medical Observer* with the *Lancet* as *Lancet and Observer*, of course renders this the regular successor of Dr. Lawson's founding in 1842. A present tribute of respect, therefore, comes from no one with more propriety, certainly with no greater sincerity and esteem for his professional industry and scholarship, and for his many social and domestic virtues, than from us.

Immediately after returning from New Orleans, Dr. Lawson brought out his work on Phthisis Pulmonalis, the labor of his life. We quote the following closing paragraph of the *critique* of the *British and Foreign Medico-Chirurgico Review* in its notice of Dr. Lawson's book, April, 1863:

"For acuteness of observation, for sober discrimination and sound judgment, and fair criticism of the writings of others, and especially of cotemporaries, and for the wide knowledge which it displays of the literature of his subject, we know few books superior to it. We bestow our praise the more readily, our author being an American, of Anglo-Saxon race, as his name implies, and one who, we trust, will, with all his right-minded

countrymen, still cherish a love of the old stock from which he sprang, abhorrent of the vulgar clamor sadly now prevailing against England, as if the American States, whether united or separated, Federal or Confederate, had not, with our county, a common interest, apart from the community of blood—that of language, of literature, and of laws."

Dr. Lawson continued in the regular performance of his professional and college duties up to the time of the Christmas holidays, though it was well known that his health was feeble, and that study and close attention to duty was telling upon him. He then went to the country for a brief relaxation, but returned after a few days to take his sick couch, from which he was destined never more to return to the labors of earth.

Dr. W. H. Taylor, who conducted the *post mortem* examination, has handed us the following notes, which will be read with interest.

Examination Thirty-Six Hours after Death.—Body emaciated, anæmic, slight *post mortem* rigidity. Extensive adhesions of the pleura were found, which in the upper part of the thorax were very firm, in the lower lateral portions of left were indications of recent inflammation. The lungs presented extensive vesicular emphysema predominating in the right. In the apex of right lung were several tubercular cavities each about the size of a hazel nut. Throughout the entire parenchyma of both lungs were small yellow tubercles in all stages, some hard, some softening, some cretified. The surrounding lung structure was engorged, and in some portions hepatized. The pericardium was healthy. It contained rather more than the usual amount of fluid which was tinged with blood. The walls of the heart were not more than half their usual thickness, and were so soft as to be easily penetrated by the finger. The small intestines were healthy. In the head of the colon were numerous small oval and round ulcers penetrating the mucus and muscular coats. The mucus membrane surrounding the ulcers was of a dark color. Several patches of chronic engorgement were found in the mucus membrane of the rectum. The liver was so soft as to tear by its own weight when but partially raised. The spleen was twice its usual size and very soft. The kidneys were about normal size, dark colored, very flabby, and the fascia propria easily detracted. On section the junction of the cortical and medullary portions was scarcely distinguishable. A considerable quantity of thin dark fluid with oil globules flowed from the cut surface. The calices were lined by a yellow deposit of cheesy consistence about a line in thickness, and contained a milky fluid.

The following is the tribute of the profession on this occasion:

In Memoriam.—At a meeting of the Regular Medical Profession, held at the Medical College of Ohio, on Saturday, 23d inst., the following resolutions were, after appropriate remarks, unanimously adopted.

J. L. Vattier, M.D., President.

J. P. Walker, M.D., Secretary.

"*Whereas*, It has pleased God, in his good providence, to remove from our midst our professional brother, Dr. L. M. Lawson, late Professor of Theory and Practice in the Medical College of Ohio; therefore, be it

"*Resolved*, That in the death of Dr. Lawson, the profession of this city and whole country, has lost an accomplished member, and one wholly devoted to scientific pursuits.

"*Resolved*, *further*, That in his death the profession has lost a member whose labors in behalf of medical science have given additional luster to the American profession of medicine at home and abroad.

"*Resolved*, That in him we lose the well-bred gentleman, of amiable manners, wholly directed during his entire life, to the advancement of his profession, and the welfare of its members.

"*Resolved*, That a copy of these resolutions be sent to the family of the deceased, and published in the daily papers, and in the Cincinnati *Lancet and Observer*."

The funeral took place from the First Presbyterian Church of this city, the discourse being delivered by the Rev. Mr. Worrall, of Covington, and the remains were followed to the cemetery by the Freemasons, of which body he was a Knight Templar, by the Profession, and the students of the Medical College of Ohio. His memory and teachings will long remain with the profession of this Great Valley. His body rests in the tomb 'till the beauty of the Resurrection morn.—*Cincinnati Lancet and Observer.*

French and English Army Hospitals.—Dr. H. B. Franklyn, Surgeon First Battalion 10th Foot, in a letter to the *Times*, states that, with respect to the special diseases which form the bulk of admissions to the English army hospitals, the French are more fortunate than ourselves. In 1858, the admissions to the hospitals in Paris were 24 per 1,000 men, while at Aldershot they were 411 per 1,000, and at Woolwich 512 per 1,000. Sometimes it fell in Paris to 16 per 1,000. In Marseilles, the worst French garrison, it reached 113 per 1,000.

Azulene of Patchouly.—Those who took an interest in the exhibition of 1862 know that Mr. Septimus Piesse was one of its most active Jurors in Class 4. While examining the exhibits of M. Mero, of Grasse, an apparently anomalous substance was shown to the jurors: this body was called "chrystalized patchouly." Now, chrystalized anise and crystalized otto of roses are the normal state of these bodies, but with patchouly oil it is not so, and the jurors naturally viewed crystalized patchouly with some suspicion. Portions of it were given to Mr. Piesse for chemical examination. The result proved that the crystals were a true camphor of patchouly of the atomic composition of valerole. M. Mero got his medal. The chemical examination of otto of patchouly was continued by Mr. Piesse, and the result has been the discovery of a remarkable blue body, termed by him *azulene*, from its sky-blue tint and from its sky-like optical properties. Further study has established the fact that azulene is not peculiar to patchouly, but exists in several essential oils, to the presence of which, in fact, they own their color. Blue oils, such as from the wild chamomile, contain pure azulene; green oils, such as wormwood, contain azulene and a considerable portion of yellow resin, thus disguising its presence. Sir David Brewster has pure azulene under optical examination. Several years past he made experiments in the same direction. He says: "Two blue oils, Matricaria chamomilia and Achillea millefolium, which owe their color to the presence of azulene, differ from all the bodies which I have yet examined. Between the two lines A and B of Farnnhofer's map of the spectrum, there are two groups of lines, and the two oils absorb the light in these portions more powerfully than in the portions adjacent to them. No other fluid or solid on which I have made experiment acts in a similar manner; but, what is very remarkable, the earth's atmosphere exercises a similar action when the sun's light passes through its greatest thickness at sunrise and sunset." In a paper by Mr. Piesse, read before the Chemical Society, describing azulene, the author stated that blue otto of chamomile yields one per cent., otto of wormwood three, and otto of patchouly six per cent. of the new body. The patchouly plant is already commercially cultivated at Penang, and any quality can be grown in Ceylon. Patchouly is said to enter into the composition of Indian or Chinese ink. Mr. Piesse thinks that, on account of the general presence of azulene in volatile oils (to which, in a measure, it gives their color,) it plays some special part in connexion with these odoriferous bodies, and he hopes soon to elicit some more facts relative to it.

On Topical Injections of Strychnine in Cases of Paralysis of the Facial Nerve.—M. Courty, Professor of Surgery at the Faculty of Montpelier, having succeeded in controlling severe neuralgic pains by injections of strychnine, tried them likewise in paralysis of the facial nerve, as well as loss of the power of movement in other parts. In different cases, of paralysis, and especially in chronic cases, the result was not favorable. The author succeeded, however, in a case of paraplegia; the patient, a woman aged forty-five, having been thus paralyzed for twelve months. Many remedies had been tried; but a few injections of strychnine on a level with the inferior extremity of the spinal marrow sufficed for the cure. Success was also obtained in three cases of recent facial paralysis. The first patient was a man of fifty-six; the second, a lady of twenty-five; and the third, a young lady of twenty-two. They were all in the early stage of the disease; and the strength of the solution varied from one in a hundred to one in seventy. A few drops (from eight to sixteen) were injected along the course of the facial nerve, between the stylo-mastoid foramen and the neck of the lower maxilla. The injection was repeated every second or third day. All the muscles of the face recovered the faculty of movement after from three to six injections, in about ten days or a fortnight. The author states that no relapses have taken place in these cases.

New American Pharmacopœia.—The January number of the *London Lancet* contains a very appreciative review of the last edition of our Pharmacopœia. The notice concludes with the following paragraph:

"Upon the whole, we consider the New United States Pharmacopœia a work highly creditable to its compilers and the profession. It bears the impress of an honest and earnest endeavor to advance the science and art of healing, to render available to all the experience and information obtainable from every quarter, and without favor or prejudice to adopt whatever may be practically useful from any source."

Gossip—New Mode of Preparing Beef Tea.—A medical friend had occasion not long since to order "beef tea" for a patient, and at a subsequent visit happened to inquire of the nurse if she understood the art of making beef tea correctly: Oh, yes, she replied—but for fear she might be mistaken she had consulted another lady friend learned in the duties of the sick room; and between us, said she, we succeeded beautifully. I

took a nice piece of beef—cut it in very fine pieces—put them in a bottle, corked it carefully, and then put it in a kettle of water and boiled for two hours: we then took out the bottle and fed the patient a spoonful of the water from the kettle every two hours!

Health in the British Army.—In the English Infantry the average number of sick is about 50 per 1000 men; in the English cavalry a little less; in the Royal artillery a little more; and the military train and depot battalions, at most 7,000 men, furnish about 1400 admissions per annum, on account of these two corps being chiefly composed of old and young soldiers. Striking an average in the British army the number of sick is nearly 55 per 1000 of strength; in the French army 45; in the Prussian 47; and in the Austrian 48. The average time in hospital is 17 to 20 or 21 days; in the French army it is 16 days; in the Prussian army it is 16 days; and in the Austrian army it is 17 days.

Scanzoni on Chronic Metritis.—This eminent physician has lately published a work on this subject, and dedicated to the Obstetrical Society of London. The author considers that one of the causes is *acute* metritis, the latter being due, among other causes, to excessive sexual intercourse. On this head Scanzoni finds great fault with the custom now prevalent in Germany, and imported from England, of traveling immediately after the wedding. He considers that Bennet, in England, and Becquerel, in France, are wrong in their views as to the pathology of chronic metritis, when these authors ascribe the developement of different uterine affections to ulceration of the the cervix uteri. Scanzoni is by no means satisfied with the uterine sound; he warmly condemns its abuse, and considers the case very rare in which its use, in a diagnostic point of view, is indispensable.

Proportion of Births to Population.—The proportion of births to population in various European countries is given in a blue-book of "Statistical Tables relating to Foreign Countries." In England and Wales the annual births are 1 in 28 persons; 1 in 30 in Belgium, Holland, and Norway; 1 in 32 in Sweden; 1 in 33 in Hanover, the Hans Towns, and Denmark; 1 in 34 in Greece; 1 in 38 in France; 1 in 26 in Wurtemburg; 1 in 25 in Russia; 1 in 24 in Austria, Saxony, and Prussia; and in Poland, 1 in 23.

Alleged Poisoning by Strychnine.—A crime similar to that committed by the notorious Palmer is the subject of judicial investigation in Paris. A physician insured the life of his wife for 500,000f. (£20,000), and shortly after the payment of the first premium the young woman died. The suddenness of the death, and the large amount for which the life was insured, created suspicion in the minds of the directors of the insurance company, and they determined to make the case known to the highest law authority. An investigation was commenced under the direction of the Imperial Attorney-General, in consequence of which the physician was arrested and committed to the prison of Mazas.

New Vaccination Act.—On the 1st proximo, an act of Parliament will come into force making it compulsory in Ireland to have all children born after the 1st of January vaccinated within six months, under a penalty of 10*s*.

Two New Cases of Syphilis Conveyed by Vaccination.—Besides the case of M. Devergie, lately mentioned, we have now one alluded to by M. Chassaignac before the Surgical Society of Paris; and another observed by M. Herard, and brought before the Medical Society of Hospitals. The parents, in both cases, have not suffered from syphilis, and the specific ulcers became apparent in the children at the spot where vaccination had been performed. The symptoms of syphilis were verified by the members of both the above-mentioned Societies.

The Queen and the Tobacco Question.—The use of tobacco within the precincts of Windsor Castle has been prohibited by express command of Her Majesty the Queen.

CHICAGO MEDICAL COLLEGE.

Medical Department of Lind University.

The regular Annual Lecture Term in this Institution will commence on the second Monday in October, and continue until the first Tuesday in March following. Clinical Lectures *daily* throughout the term.

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HENRY WING, M.D., Professor of General Pathology and Public Hygiene.
F. MAHLA, Ph. D., Professor of Inorganic Chemistry.
EDMUND ANDREWS, M.D., Professor of Principles and Practice of Surgery, and of Military Surgery.
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For the Winter Term, admitting to all the Lectures in the College,	$50.00
Graduation Fee,	20.00
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ARTICLE IX.

ABOUT POCKET SURGICAL CASES.

By E. ANDREWS, M.D., Professor of Surgery in Chicago Medical College.

The object of a case of pocket surgical instruments is, that the practitioner may always have with him a small supply of such instruments as he most frequently uses, and a few others which, though not so often required, yet are occasionally called for with such urgency and suddenness as to admit of no delay. The size of the case should be as small as possible, and the material of it such as to be durable, handsome, and capable of excluding moisture.

Unfortunately, most of the cases which are sold, are combined by the makers without sufficient consultation with surgeons; hence the material of the case is generally morocco, which soils, wears out, and always admits dampness, and the interior of it is lumbered up with an excessive variety of forceps and scissors to the exclusion of better things. Several passable cases, however, have been produced, among which, for a small one, Parker's case is one of the best, and for a fuller one, Reed's case. Both, however, are made of morocco, and like others of that sort, soon lose their comliness, and do not perfectly protect the instruments.

On these accounts, I resolved to have a new case constructed, with a new selection of instruments, such as experience showed to be most convenient. I therefore made drawings and descriptions of a case such as I desired, and requested TIEMAN & Co., of New York, to manufacture and keep them among their stock, which they readily undertook to do.

The material of the case is polished hard rubber, perfectly impervious to water, and having almost the beauty of jet. It is, therefore, extremely durable, and will retain its beauty and polish for indefinite years. In fact, the case will be unimpaired when the instruments are worn out by long use.

It opens on a strong hinge, in two equal valves, exposing all the instruments to view at once, ready to be taken up for use. When closed it is about $5\frac{1}{2}$ inches in length, $2\frac{3}{4}$ inches in breadth, and $\frac{7}{8}$ of an inch in thickness. The ends and all the edges are rounded to prevent wearing the pocket, and the whole appearance is much more beautiful and solid than that of leather and morocco cases.

The selection of instruments is as follows:—

1 Scalpel,
1 Probe pointed bistoury, } both in one handle.
1 Tenotome,
1 Sharp-pointed bistoury, } " " "
1 Gum Lancet,
1 Tenaculum, } " " "
1 Pair of Scissors.
1 Rat-toothed or bulldog forceps.
1 Dressing Forceps.
1 Silver catheter in 4 pieces, which can be combined into a male, or female catheter, as desired.
1 Porte caustique.
1 Silver probe.
1 Silver director.
1 Pocket case saw.
1 Silk, ivory, or wooden card for holding ligature.
6 Suture needles.

I find by experience that this combination is extremely convenient for the following reasons:—The first six instruments, of course, are found in every pocket case having any preten-

sion to completeness, and need no remarks. Of the scissors there is only one pair, and that of the small straight variety. This form is by far the best for general purposes, and the insertion of two or three varieties of scissors into one pocket case is a very inconvenient waste of room. With the straight scissors one can do almost everything required, including even the operations for entropium and strabismus. For forceps, I prefer the small rat-toothed variety, without any lock, but others choose the bulldog form. Either can be put in, but it is not best to fill up the case with both. The dressing forceps, so called, is of the kind resembling polypus forceps. It serves a very valuable purpose, not only in handling dressings, but also in extracting fragments of necrosed bone from deep fistulas. It is also an excellent bullet forceps for pistol balls which have not penetrated very deeply, and has the merit of being able, in cases of impacted balls, to bite out and bring away a small chip of lead, thus settling the question of whether the body seized is really the bullet, or only the edge of a bone. While in the army, I found this to be a very important quality in some difficult diagnoses. It also serves as a very excellent polypus forceps for the removal of polypus nasi.

The compound silver catheter needs no explanation. It is capable of being turned into a male or female instrument as required. It seems not generally known among physicians that with a clean silver catheter and a scalpel or lancet, the operation of tapping can be performed with as much neatness and perfection as with the best trochar.

The pocket case saw is a most important instrument, and yet very seldom seen. The form heretofore made is that of a delicate saw set in a tortoise shell handle, and shutting up like a scalpel. This has three faults. 1st. The blade can be no longer than the handle. 2d. The junction of the saw with the handle is liable to break under hard usage, and thus totally disable the instrument. 3d. The combined thickness of the saw and of the handle causes it to occupy too much room in the case. For these reasons I devised a saw of which the handle and blade are all in one piece of steel, and thin enough to lie

in the case beneath another instrument, thus practically taking up no room. It has thus strength and compactness. With this saw a femur or a humerus can be sawn off without difficulty. Hence in an emergency, by means of this pocket case alone, the surgeon need not hesitate to undertake the amputation of an arm or a thigh. With the scalpel incisions may be made on the circular plan, or, if preferred, flaps can be cut from without inward, as advised by Dr. Prince, of Jacksonville. Practically, however, the pocket case saw comes oftenest into use in fractures for cutting and modifying splints to fit the patient. For this purpose I find it an absolute necessity. It is also available as a metacarpal saw in minor amputations.

The ivory card, which may be made also of wood, shell, or horn, is by far the best implement for holding ligature silk. It keeps it perfectly straight, smooth, and unentangled. It is notched at the extremities, and the silk wound on lengthwise, and the whole held in a loop like any other instrument.

The suture needles, instead of being stuck in a piece of paper or cloth, are neatly deposited in a small box in one valve of the case, and covered with their inside lid. All these instruments are held in position by loops of elastic ribbon, which keep everything securely in place, even if the case is opened and held bottom upwards. The whole inside is lined with velvet, and a fly pocket for containing adhesive strap is attached between the two valves. The price of the whole is about $25, and it may be ordered either of Tieman & Co., of New York, or of Bliss & Sharp, Chicago.

ARTICLE X.

CATALYSIS AS A CHEMICAL, PHYSIOLOGICAL, AND PATHOLOGICAL PROCESS.

By JOHN REID, M.D., of Chicago, Ill.

Communicated to the Chicago Medical Society.

Catalysis is a term used to designate the changes produced among the proximate and elementary principles of a compound,

by virtue of the presence, merely, of a substance which does not of itself enter into combination with them. In ordinary chemical reactions the substances brought together undergo mutual decomposition, and in the new combinations which take place all traces of the original compounds disappear. On the contrary, in catalytic changes, the active agent of the process contributes nothing of its own composition or elements to the substances acted upon; its mere presence being sufficient to induce them. No explanation can, in the present state of our knowledge, be given of the nature of the force thus brought into exercise, and hence, perhaps, the propriety of the designation employed, which simply expresses the action of "presence" in inducing decomposition.

The essential conditions of its action are, first, the presence of a compound substance capable of undergoing change, and second, the contact of a substance capable of exciting or setting those changes in motion. It is not necessary to the idea of catalysis that the catalytic agent should itself remain unchanged. This may or may not occur. Thus, where an inorganic compound, as sulphuric acid, is the catalytic, no alteration takes place in it. On the other hand, when it is an organic principle, in most cases, perhaps in all, changes originating in it, constitute the first and essential part of the process.

The class of phenomena comprehended under this term though obscure, is yet an extensive one, and of common occurrence. It is not limited to any particular set or group of substances. It may be seen in the inorganic kingdom in the action of one inorganic body upon another. Also in the action of an inorganic on an organic substance. It is most abundantly and familiarly developed in the action of azotised substances on each other, and on other organic substances, as in ordinary fermentation and other analogous changes. It also comprehends a large and most important class of vital phenomena, as the digestion of food, and, probably, its ultimate assimilation in the tissues, and the varied metamorphoses occurring there. In various pathological states we witness its direful operation, even in the mildest phases of its action, in contamination and per-

version of the animal fluids, in disturbance of all the functions of life, and in its graver operation a suddenness of dissolution which no other morbid agency can rival.

It will be the object of this paper to show the operation of the catalytic force in the various departments mentioned, with a view to a clearer comprehension of its agency in the induction of what are called zomotic and catalytic diseases.

I will then first glance briefly at its operation among inorganic substances. It is well known to the chemist that oxygen and hydrogen may be kept mixed for any length of time at common temperatures without combination taking place. But on addition of platinum, either finely powdered or in the sheet, combination immediately commences, and water is formed. It is unnecessary to say that the platinum contributes nothing beyond its mere presence to this result. Other metals, as palladium and gold, and even glass, possess the same power, though in inferior degree. Second. If a little finely powdered peroxide of manganese is added to chlorate of potassa, and a gentle heat applied, oxygen will be set free at a far lower temperature than when chlorate of pot. alone is used. All the oxygen comes from the chlorate, which is completely decomposed, while an entirely different substance, the chloride of potassium, is formed. The peroxide of manganese remains entirely unchanged. Many other illustrations might be given of the operation of catalysis among inorganic compounds, but these will be sufficient. I will now proceed to show that inorganic substances not only induce catalysis in others of the same class, but that some of them have the remarkable property of inducing it in organic substances.

Thus, dilute sulph. acid with the aid of moderate heat, converts gelatinous starch into dextrine, a substance having different physical properties, but identical chemical composition. On the application of greater heat, the dextrine is transformed into glucose or grape sugar.

Again, cane sugar in solution with sulph. acid, is rapidly changed into glucose, a substance of different though allied composition, and possessing physical and chemical characteristics of an entirely different kind. Six equivalents of oxygen, and

six of hydrogen, have by decomposition of the water present, been added to the composition of the original substance introduced. In both these experiments, the sulph. acid remains of course unchanged and undiminished.

These transformations are precisely what take place in the digestion of starch and cane sugar in the human body, where the gastric fluids and intestinal juices take the place of the sulph. acid in the experiments with corresponding results.

The action of many of our most valued and potent remedial agents, as mercury, iodine, arsenic, and others, are obvious instances of catalysis. No other remedies produce more decided and positive effects than these, yet they undergo no decomposition in the process, and are cast out unchanged.

The beneficent influence exerted by these agents in many forms of disease, and their equally destructive powers in cases unsuited for their administration, affords a wide and familiar field of observation, and present some of the most striking instances of the catalytic power of inorganic over organic substances.

Facts of this kind have many interesting physiological and pathological bearings, and can hardly with propriety be excluded from our consideration when we remember how largely and intimately inorganic substances enter into the composition of the human body, and the extent to which they may be introduced in the various ingesta and as medicines. Sulphur, we know, forms an essential part in the composition of all the protean substances, being incapable of complete separation from them, without destruction of the organic substance, and most of the various azotised principles which make up the bulk of the human body, are characterized by the presence of various inorganic substances which are essential to their composition. That their presence is essential is proved by their constancy, as well as by the intimacy of their combination, and it cannot be doubted that they take an important part in the metamorphosis of tissue. Whether the influence they exert is by that of ordinary chemical attraction, or that of catalytic power, cannot as yet be positively stated, but that it is by the latter is not an im

probable assumption, in view of the facts which I have stated, and many others which might be presented.

It is, however, among organic substances that the operation of catalytic force is more particularly and familiarly seen. One class of these, the non-azotised, though permanent under ordinary circumstances, are characterized by a special aptitude to undergo decomposition in the presence of a catalytic or ferment. The other, the azotised, are equally characterized by the property they all enjoy in an extraordinary degree, when in process of decay, of exciting these changes in proximate principles and in each other. Hence their designation in reference to these changes of catalytics or ferments. The most familiar illustration of these facts is seen in the process of fermentation. A solution of sugar in water has no tendency to ferment, but on introducing an azotised body, as gluten, the process is immediately set in motion, resulting, as we all know, in the transformation of sugar into alcohol and carbonic acid, the gluten undergoing change, but contributing nothing of its elements to this result.

The substance yeast, usually employed in the fermentation of beer, is dependent for its powers on the gluten it contains. Examined under the microscope, it is found to abound in minute transparent vesicles containing granules, which are believed to be living infusory plants, which have the power, and do actually propagate themselves, at expense of proximate principles in the solution, in which they induce fermentation. We have thus two processes going on side by side in the solution, a change in the ferment which impresses similar changes upon all proximate principles present, assimilating them to its own nature, and decomposition of the sugar, out of the elements of which alcohol and carb. acid are formed.

Fermentation, then, as we have seen, is but a catalytic process. The same conditions are required for its developement, and the results are of the same kind.

The visible extrication of carbonic acid gas occurs in vinous fermentation; but this extrication is not essential to the idea even of fermentation. In the case of acetous fermentation,

although as often conducted, carbonic acid is given off, it is not essential, (fixation of oxygen from the air being the essential change,) and in the improved processes of forming vinegar from alcohol it does not take place.

The conversion of glucose and milk sugar into lactic acid under the action of a ferment, is as true an instance of fermentation as the conversion of cane sugar into alcohol and carb. acid. The state of intestine motion and change which the term fermentation requires is met in the decomposition altered relation of atoms and change of structure which takes place.

The exception, then, which has been taken to zymosis, as a term used to express certain morbid processes which take place in the human body under the operation of a morbid poison, on the basis that fermentation, which the word Zymos is meant to express, requires the evolution of carb. acid, is therefore groundless. Webster defines fermentation as follows:—In its most general sense it may be defined any spontaneous change which takes place in mineral and vegetable substances after life has ceased. And a later authority, Chalmers' Encyclopediæ, says: "Fermentation is a term applied to the change which occurs in the organic substance, when influenced by another in a state of decay." For those who prefer it, the word catalysis may be substituted for zymosis with propriety, although the phenomena of increase of the catalytic agent or morbid poison which takes place in some truly contagious and infectious diseases, as small pox, measles, &c., renders zymosis the preferable term.

Before leaving this part of the subject, we might well challenge those who take exception to the word zymosis on the basis mentioned to show that no carbonic acid is actually evolved in the diseased changes in question. We know this to be the most constant and abundant product of tissue metamorphosis in a state of health, and therefore may, by the fairest deduction, be considered to take place in the quickened metamorphosis of catalytic decomposition.

I have thus diverged from my main subject to answer some objections which stood in the way of a profitable discussion of zymotic diseases at our last meeting. I will now return to the

subject of catalysis as acting among organic substances. It will probably be unnecessary to illustrate the subject farther than has been done under the head of fermentation. I will now consider it as a part of vital phenomena in various physiological processes. An azotised substance called diastase is easily obtained from malt by maceration in lukewarm water, which has remarkable catalytic power over starch, converting it with great rapidity into dextrine and glucose; thus producing the same effects as we have seen result from the presence of sulphuric acid. This substance, diastase, is always found in small quantity in germinating seeds and buds, in the act of development. As the process of germination advances, the starch of the seed disappears, and dextrine and glucose are formed, as is manifest without chemical tests, in the sweet taste of the juices of the young plant, and their gummy feel. Is there not good reason to believe that in this physiological act, the diastase is the active agent of the process, and that it produces these important changes in the constituents of the seed in the same way that it does upon these same constituents elsewhere.

In the saliva of man there is present an azotised substance called ptyaline, upon which the peculiar digestive power of the saliva upon starchy food depends. So energetic is its action that if starch paste, at a temperature of 100° F., is introduced into the mouth, it will yield traces of sugar in half a minute. The admixture of starch and saliva out of the body produces the same effect, and is a true instance of catalysis. But it is in the small intestine that the digestion of starch and sugar especially takes place. Under the action of the intestinal juices, the same series of changes take place which we have seen under the catalytic action of sulph. acid and diastase. The starch is converted into dextrine, the dextrine into glucose, in which state it passes into the circulation. The active agents in inducing these changes are found by experiments both in and out of the body to be the pancreatinim, a peculiar azotised principle of the pancreatic juice, and the peculiar secretion (not yet well analyzed) of the follicles of BRUNNER and LIEBERKUHN: these substances yielding nothing of their own elements to the

new substances formed, evidently act by virtue of their catalytic power.

The process of stomach digestion gives us another remarkable evidence of catalytic transformation. Under the action of the gastric juice, all the albuminoid elements of the food, as albumen, fibrin, musculine, caseine, &c., are without distinction converted into a new substance called albuminose. This substance, while it has the general characters of those of the azotised class in being uncrystalizable and containing nitrogen, has peculiar characters of its own. Unlike albumen, it is not precipitated by nitric acid and heat; and has the property of freely permeating organic membranes, which albumen has not. The process of stomach digestion, then, is not a simple solution of albuminoid substances, but a transformation of them, effected by the gastric juice. This power of transformation does not reside in the acids of the gastric juice, which are found at the temperature of the human body to exercise only a feeble influence, although at the point of ebullition they possess it. The active agent in the process is found in the pepsine, a peculiar azotised substance found in the stomach, which acts the part, even in minute quantities, of a most energetic ferment. So energetic is its action that half a grain of acetate of pepsin dissolved in hydrochloric acid is capable of taking up 210 grains of white of egg, while the acid alone, at the same temperature, had an inappreciable effect. The azotised food being thus reduced to the condition of albuminose, the digestive process is perfected, and in this form it freely permeates the membranes and enters the circulation.

We have thus seen that the various alimentary substances, both of an azotised and non-azotised kind, required for the sustenance of the body, are fitted for appropriation by a process of catalysis. That in each kind of digestion there is provided a special catalytic agent, with special powers over the particular substances subjected to its agency. These and other considerations would naturally lead us to the inference that in the progress of these alimentary substances, thus changed, towards the general circulation, the changes which take place

in them, and their subsequent metamorphosis in the blood, are the results of a similar process. Here we are no longer able, as in the former case, to give a positive demonstration of the nature of the changes which occur. We are left more to inferences and deductions, and the convincing power of analogies. These, however, establish, on a tolerably firm basis, that the same force is in exercise in the latter case as in the first. And further, that the whole process of final assimilation in the tissues, and the various metamorphoses occurring there, both of a progressive and retrogressive kind, are referrable to its operation.

It would obviously be impossible in a brief article to enter into anything like a full description of these subjects, even if our knowledge of them warranted it. I will only therefore allude to a few of the least debatable instances of catalytic transformation occurring in the penetralia of the body.

In examining the blood of the portal veins we find its albuminous constituent to exist in the form of albuminose. After emerging from the liver, it is found in the hepatic veins and vena porta ascendeus, no longer as albuminose, but as albumen. This change, according to CARPENTER, has been effected by contact with the tissues of the liver. The catalytic agency of that organ, or some unascertained principle in it in inducing this change, seems evident. A similar catalytic influence is exerted by that organ in the glucose which it receives from the portal vein after the digestion of starchy food. The saccharine principle, entering as glucose, emerges in the hepatic veins as liver sugar, a form of sugar of which the blood is much more tolerant than of any other. Again, the liver is proved to be of itself a sugar-producing organ. It is capable of producing it from albuminoid substances. Of the various decompositions and metamorphoses which culminate in the production of liver sugar from albuminous substances we know nothing, but in the process of its elaboration we do know that a peculiar substance is formed called glycogene, intermediate in composition between dextrine and glucose—the formation of which is one step antecedent to the production of sugar. It does not of itself contain

sugar, but is readily converted into it by contact with any of the animal ferments, as those contained in the saliva, or in the blood. The unavoidable inference in reference to the glucose conveyed to the liver, and converted there into liver sugar, is that it is so converted by a catalytic change similar to that by which cane sugar is converted into glucose by the action of a ferment; and in reference to the glycogene, that it is transformed into sugar in the same manner that dextrine could be transformed under similar conditions.

Both glucose and liver sugar rapidly disappear as such when introduced into the general circulation. LEHMAN and ROBIN consider that it undergoes immediate conversion into lactic acid, a substance of similar composition, and of the existence of which as a normal ingredient of the blood there is now no doubt, in which state these saccharine principles are appropriated to their peculiar purposes in the body. The facility with which these substances are transformed into lactic acid in the presence of azotised compounds out of the body, renders it extremely probable that a similar change is constantly going on under similar influences within it. The albuminous and fatty contents of the lacteals as they pass on to join the general circulation, under the catalytic agency of the vitalized surfaces over which they pass, are gradually prepared for their final destination, and after being subjected to the action of the air in the lungs, are finally mingled with the blood in the general circulation, where by the catalytic action of its ingredients, they are assimilated to its own composition.

Were we able, it would be interesting to follow these nutrient principles to their ultimate destination in the tissues, and mark the process of their transformation there into the vital constituents of the frame. But in these recesses we come into immediate contact with the principle of life itself. We cannot isolate the active agent, but the transformation is apparent, and so far as we see it is strictly catalytic. Each particular tissue or organ attracts to itself that which it requires for its nutrition, and once in contact with it transforms it into its own structure.

Then commences the destructive or retrograde metamorphosis, by which parts which have fulfilled their functions are prepared for expulsion from the body by transformation into effete and excrementatious products. These, under ordinary circumstances, are removed as fast as they are formed by the various excretory processes. If, from any cause, they should accumulate in the blood, serious derangement of the health, and even death, is sure to result. The noxious effects of retained carbonic acid and urea are sufficiently familiar. But independent of the directly poisonous influence which they exert, the retention of excrementitious products have been clearly demonstrated to establish a predisposition to the developement of various acute specific diseases. In proof of this I need only cite the prevalence and malignity of these disorders among persons breathing an "atmosphere charged with carbonic acid, and laden with putrescent emanations." "And the peculiar liability of the parturient female, whose blood is charged with substances in a state of retrograde metamorphosis, to that most fatal zymosis, puerperal fever." The liability of the intemperate, the famished, and the overworked to these diseases, may all be found in the contamination of the blood from the presence of excrementitious products. That these substances, already in a state of change, should be readily and powerfully acted upon by the introduction of an energetic ferment from without, is not at all surprising; or, that without any such introduction, some potent principle might be developed among its azotised constituents which might thus originate *de novo* some similar form of disease.

For the production of a certain class of contagious diseases, as the eruptive fevers, it seems to be well established that two conditions are essential. In the first place, an existing predisposition in the subject, which we call a predisposing cause, and in the second place, the inception of a morbid poison, which constitutes the excitor or exciting cause. If either of these are absent, the specific disease is not induced. These are precisely the conditions required for the production of catalytic action in general. A solution of sugar in water has no tendency to un-

dergo decomposition until the catalytic agent or ferment is introduced. Again, in these contagious diseases, a surprising multiplication of the original morbid poison takes place during their progress. This also has its complete analogy, as we have already seen, in the development of the yeast plant, used to induce fermentation of an infusion of malt. The changes which actually occur in the blood in catalytic diseases furnish the last required analogy to the fermenting process. These are various and striking, but as yet have been but partially elucidated.

Its chemical analysis seems to be attended with peculiar difficulties, so that the least satisfactory of our knowledge of the pathology of disease, is that which concerns the blood.

In general it may be said that in typhoid, putrid, and malignant forms of disease, the fibrine is notably diminished, and also the other solid constituents. . In the exanthemata and typhus, the alkaline salts are relatively increased. In the malignant forms, and in cholera, the coagulating power of the blood is much diminished, and sometimes destroyed.

These are not put forward as the peculiar or exclusive results of the operation of catalytic poisons; they are nevertheless results which attend their action. The arrested secretions and altered excretions afford more decided evidences of its perverted condition. The increase of urea, uric acid, hippuric, sulphuric, and phosphoric acids and the pigments, and the occasional presence of unusual products, as leucine and others, in the urine, indicate the presence of these effete matters in the blood in unusual proportions.

The presence of the coloring matters, sometimes in fourfold increase, is especially significant of destructive changes in the blood, being by the best investigators attributed to the disintegration of the blood corpuscles. The peculiar and characteristic emanations from the lungs and skin, and the strangely vitiated and often putrescent discharges from the bowels, all point directly to the blood out of which they are drawn or elaborated, as the primal source of their perversion. The poisonous quality of such blood introduced into the healthy or-

ganism, is better evidence of its perversion than any chemical examination could afford. A new and important sort of evidence of blood contamination in catalytic diseases has been furnished by the experiments of SCHMIDT. "He has discovered that blood drawn from the veins of a healthy man will not cause either sugar, urea, amygdalin nor asparagin to ferment. If the same blood be exposed to the air for a few days, it will occasion fermentation in saccharine matter, and after fourteen days' exposure another principle will be developed capable of causing that change both in urea and asparagin. On the other hand, blood drawn from persons laboring under various diseases of this class, including cholera, induces fermentation in a few hours, not only in sugar and urea, but also in amygdalin." These facts, brought prominently forward by Dr. POLLI, are conclusive as to the alterations in the quality of the blood, and complete the parallel sought to be established between the morbid processes at work in the diseases under consideration, and those of catalytic actions in general, and abundantly justify the designations of catalytic and zymotic, which have been applied to them.

ARTICLE XI.

ANIMAL POISONS AS CAUSES OF DISEASES; INDICATIONS FOR TREATMENT IN DISEASES PRODUCED BY THEM.

By N. S. DAVIS, M.D., Prof. of Practical and Clinical Medicine.

Remarks made in a Discussion before the Chicago Medical Society, Feb. 19th, 1864.

The question before the Society for discussion this evening, is, what are the indications for treatment in diseases arising from animal poisons? The time allotted to each member, under the rules of the Society, is so limited as to preclude all preliminary remarks in relation to the existence and *modus operandi* of animal poisons, and compels me to proceed directly to the question. Assuming, then, that animal poisons exist capable of producing disease; and that they act through the medium of the

blood, to which they gain access, by absorption from some injured or diseased surface; by inhalation with the air through the lungs; or by retention, through failure of some one of the excretory organs to perform its functions, I will proceed directly to the question. The distinct rational indications for treatment in diseases of the class here supposed, may be stated in four propositions:—

First, To neutralize or antidote the poison, and thereby render it harmless.

Second, To introduce such remedial agents as will retard or altogether stop the SEPTIC or deteriorating influence that most of the animal poisons produce on the constituents of the blood.

Third, To favor, as far as possible, the elimination of the poison through the natural excretory organs.

Fourth, To mitigate or remove the irritating effects of the poison, on the properties and functions of the organized tissues of the body.

If the first of these indications could be fulfilled completely, during the incipient stage of the disease, it would doubtless remedy the whole difficulty, and render the remaining indications unnecessary.

When the poison is being introduced by absorption from wounds or injured parts, as the bites of serpents, rabid animals, &c.; or from erysipelatous, gangrenous, and suppurating surfaces, such a result is sometimes practicable, by the application of the antidote directly to the wounds or diseased surfaces.

The practicability of this has been many times demonstrated by the speedy application of a solution of iodine to the bites of poisonous serpents, and more recently by the local application of bromine, &c., to tissues in a state of gangrene. A variety of facts seem to show conclusively that iodine, chlorine, and bromine are reliable antidotes to many, at least, of the animal poisons, wherever they can be brought fully in contact with them.

But each of them possesses properties of so much activity, when taken internally, that they cannot be safely introduced into the blood in sufficient quantity to act as efficient antidotes

to animal poisons already impregnating the mass of that fluid.

Conceding the fact, then, that we are yet unacquainted with any therapeutic agents what can be safely trusted to antidote animal poisons already in the blood, the second indication named becomes of much practical importance; for if we can introduce into the blood, through absorption from the stomach, any agent or agents, the presence of which will prevent the poison from inducing its special *septic*, or peculiar change, in the quality of the blood and the properties of the tissues, it will sooner or later find an exit from the system through some of the excretory organs, and the convalescence of the patient will have been secured. It is unquestionably true that most of the animal poisons produce their violent and dangerous effects, by primarily acting on the constituents of the blood and properties of tissues in such a way as to effect a more or less rapid increase of themselves. Thus the most minute atom of variolous poison, introduced into the system, either by inoculations or inhalation, produces no perceptible disturbance for several days, when it is found to have so multiplied as to furnish deposits in the whole cutaneous surface, and even to impregnate the surrounding air to a certain extent. So, too, in the absorption of pus or putrid animal matter from an unhealthy suppurating surface, or from phlebitic inflammation, the minute quantity thus absorbed becomes rapidly multiplied until a general state of pyœmia is induced and puruloid deposits are found in various parts of the system, with a rapid exhaustion of the patient.

It is this change in the elements of the blood and the properties of the tissues that constitutes the *septic* or zymotic action of animal poisons. To prevent or arrest this action, so as to avoid the multiplication of the poison in the system, constitutes the second indication for treatment, as already mentioned. The remedies that have long been used for fulfilling this indication, though without a very definite idea of their *modus operandi*, are the mineral acids; the preparations of Peruvian bark; and the chlorine salts, more especially, the acid tincture of chloride of iron. More recently the experiments of Dr. Polli, in Europe, showing the efficiency of the sulphites of lime

and soda, in preventing the injurious effects of pus and putrid animal matter when introduced into the blood of animals, has caused those substances to be used as remedies in a variety of diseases supposed to depend on blood poisoning. From my own experience thus far, I am led to believe they will be found to possess great value under certain circumstances. But it will be chiefly as *anti-septics*, in preventing the action of such animal poisons as are derived from the decomposition of animal matter; and to be effectual they must be administered sufficiently early to be present in the blood coincidently with, or very soon after, the introduction of the poison. It will be remembered, that Dr. POLLI, in some of his most striking experiments, administered the sulphites to the animals long enough to have them absorbed, before the poisonous matter was injected into the veins. And we are inclined to think that these substances will be found of very great value, whenever they can be administered sufficiently early to be present in the blood, before the poison has commenced its deteriorating effects on that fluid. For this purpose their administration should be commenced, whenever possible, during the incubative stage of such diseases as arise from the action of animal poisons. The quantity given should be sufficient to impregnate the fluids of the body freely, and the administration should be continued until all direct action of the poison ceases. It is highly probable that future experiments and observations will show that the action of the sulphites is most efficient against that class of animal poisons which arise chiefly from the decomposition of animal matter, and gives rise to erysipelas, phlebitis, and pyemia. Some have objected to the use of the sulphites, and all other remedies founded on the indication now under discussion, on the ground that the indication itself involves a humoral pathology, analagous to the ancient doctrines of concoction and fermentation; processes which they claim cannot take place in the living system. We see no force in the objection. For if we admit the absorption of an animal poison, it makes no practical difference in the indication for treatment, whether the poison produces its deteriorating effect by acting *directly* on the com-

position and properties of the blood, or *indirectly*, by first changing the vital properties of the solids, and through them affecting the quality of the fluids. Some of the remedies that have long been used in the class of diseases under consideration, such as the tincture of the choride of iron, undoubtedly act more or less on the vital affinity of the organized structures, and not merely by diminishing the alkalinity of the blood as many suppose.

The third indication we have named, is founded on the fact, that nearly all poisons manifest an affinity for some one or more of the exeretory structures or tissues through which they are ultimately eliminated, if life is preserved, and no antidotes are successfully administered. Thus, the contagions giving rise to the class of eruptive fevers, all manifest a strong affinity for the cutaneous tissue, in which they find a lodgement, induce specific inflammation, and from which they are finally eliminated. Whenever such a tendency can be discovered, it is obviously desirable, not only to carefully avoid such remedies as would interfere with the natural tendency of the poison, by producing active determinations in an opposite direction, but to use such as will gently promote the action of the organs most likely to eliminate the morbific agent. This rule would forbid the use of active cathartics and depletives in the early stage of all eruptive fevers, and clinical experience has fully demonstrated their inutility.

The fourth and last indication, calls for the use of such means as are calculated to allay the general excitement, and mitigate the extent and severity of local complications. If either one of the three preceding indications could be early and perfectly fulfilled, this last would be rendered unnecessary in most instances. But in the present state of our knowledge, this can seldom be done; and hence to mitigate the effects of a poison that he can neither completely antidote nor expel from the system, often becomes the paramount duty of the practitioner at the bedside. Of course, the remedies for this purpose, will be as variable as the effects to be treated. In some cases the active grade of excitement will call for sedatives and alterants; while

in others stimulants, anodynes, and tonics may be required. Of course no individual remedies can be enumerated under this head, without entering into the details of each individual case that might be presented to the practitioner.

ARTICLE XII.

SANITARY REPORT OF THE WEST DIVISION OF THE CITY OF CHICAGO.

By HIRAM WANZER, M.D., of Chicago, Ill.

Read before the Chicago Medical Society, Friday Evening, Feb. 26, 1864.

MR. PRESIDENT AND GENTLEMEN:—Having been appointed to make a Sanitary report of the West Division of our city, should I wait longer, I should not be better prepared, probably, than at present. The writing a Sanitary Report of the condition of our city, calls for a more extensive experience and more time than I have had to devote to it.

During the last quarter there have been a marked increase in some diseases, especially those classed as zymotic. Small-pox, of the milder form, has abounded more than any other disease of the class. During the month of January last, the deaths from small-pox reported were 55; the month previous 23. Showing how the mortality increases by cold weather, in my opinion the majority of cases were of the milder variety, and have recovered without much medication, never coming under the observation of the physician. I believe the pathology and treatment of small-pox is not well understood by many of our respectable practicing physicians, and can only be learned by practical observation at the bedside. As far as I am acquainted, successful vaccination has been a safeguard against the disease in most instances. Chicken-pox has prevailed somewhat extensively, and in some instances has been mistaken for small-pox, which has increased the panic. A few cases of scarlatina and measles have been noticed. The treatment has been expectant, and the cases have done well. In my opinion there is generally

too much interference in these cases. Erysipelas, both idiopathic and traumatic, has prevailed somewhat extensively, but the latter variety has come more under my observation. I have had three cases that terminated almost in exhausting suppuration. They all required operative proceedure. I gave a brief synopsis of those cases to the Society, but am now better prepared to give definite results.

The first case followed an injury received at the mechanical bakery. The hand and fore-arm were caught between iron rollers, and remained there three-fourths of an hour. The soft parts of the hand and fore-arm to near the elbow, save the muscular structures, were reduced to a pulp. In a few hours erysipelas, of an intense grade, followed in the wound and in the structures of the arm to the shoulder. Upon its subsidence, gangrene followed, involving all the lacerated tissue, and the sound integument to the shoulder. It became necessary for me to strip the hand and fore arm, both anteriorly and posteriorly, of all the mortified tissue, down to the muscles, tying arteries as I went. The symptoms in this case were typhoid, and the treatment from the beginning strongly supporting. I applied, locally, equal parts tinct. ferri muriatis, and strong tinct. iodine. Diet was strong beef-tea, well salted; iron and the sulphites, were also given. A part of our success may be ascribed to the latter remedy, as there become soon an amelioration in his symptoms after its use. The patient made a fair recovery, and has gone to New York to his parents.

The second case I reported went on to suppuration. An enormous quantity of matter was imprisoned beneath the integument and fascia of the foot and leg to the knee. A large incision set free an accumulation of most unhealthy pus—and he entered immediately upon convalescence.

The third and last case of traumatic erysipelas, I believe, we are now fully prepared to report. The soldier had received a shot from a pistol. The ball entered the upper third of the thigh, probably striking the great trochanter of the femur. Glancing from there I traced it several inches down the thigh beneath the fascia lata, and over the rectus muscle, when it was

lost. No further attempt was made at finding it. Alarming eryspelatous inflammation followed speedily in the thigh, which eventuated in suppuration beneath the integument and fascia lata. The thigh become enormously swollen, and for days he would not allow me to open it, until the distension become so great that he could not endure it any longer. I made an incision four inches long, through the integument and fascia lata; an enormous quantity, it would seem a gallon, of most unhealthy pus escaped. Death, no doubt, would have followed in either of the cases mentioned before the matter would have found an external opening spontaneously. The idea is now fully established in my mind, that early, bold incisions are the only hope for our patients in such cases; for pus will hardly find its way through superficial and deep fascia in time to prevent a fatal degree of exhaustion.

We will not forget another pathological condition equally significant. There is a most poisonous agent to be absorbed into the blood. In suppuration from erysipelas cases, the pus, in consequence of its excessive alkalinity, saponifies and partly discolors the fatty tissue. The cellular tissue is broken down and escapes the wound with the adipose in the form of strings and shreds. A large handful escaped the wound a few hours after I made the incision in the last case mentioned. The direct operation in all these erysipelas cases is depressing, with marked prostration of the vital powers. The reabsorption of this poison causes early decomposition of the blood. The patient soon wears the livery of asthenia. Its presence is no less active in the rapid disintegration of the solid structures of the body, following more, in my experience, injuries, surgical operations, extreme privations, or excesses. The therapeutical indications in counteracting the effects of this zymotic agent, have been met by me with two classes of remedies. Antiseptics as the chlorides, and charcoal to operate from without. Strongly concentrated nutrient diet; tonics, especially of the ferruginous class, and the sulphite of lime to operate within. The symptoms in the last case were typhoid from the beginning. The blood had been rendered aplastic by previous dissipation. Traumatic de-

lirium and coliquitive diarrhœa became two grave symptoms. Stimulants met the first indication, and the turpentine and laudanum emulsion the second. As soon as these symptoms were overcome, the muriated tinct. iron and the sulphites were given. The patient is convalescent.

We predicted in our last report, if changes were not soon wrought in the Sanitary condition of the river, and in our streets and alleys, there would be an augmentation of typhoid fever, as there was then but few cases, and there would be others of an adynamic and zymotic character. Our predictions have been verified, and well known to all the members of the Society. Fevers of the bilious remittent, intermittent, and typhoid type have prevailed; the latter to quite an extent this winter. Some cases have terminated fatally. They have all required, after suitable preparation of the system, quinine frequently, stimulants, and supporting treatment. There have been a number of cases of puerperal fever; some have been fatal. One physician told me he had been called to three cases in consultation, and all had died. Peritonitis and metro-peritonitis, I think, have been quite frequent, generally occurring after parturition. My treatment has been cathartics, anodynes, local synapisms to the abdomen, followed by fomentations of hops.

More cases of uterine disease have come under my observation than previously. The general symptoms are pain in the head, back, loins, and radiating down the thighs, general lassitude and debility. Upon examination, in the majority of cases, there is inflammation, and sometimes ulceration and granulation of the os and cervex uteri. In those cases there is often profuse leucorrhea, with disordered menstruation. My treatment has been local and constitutional. As an internal remedy, I use frequently the elixir calysaya ferratum, prepared by Sargent. As a local remedy I rely principally upon the nitrate of silver. I find the treatment much facilitated by daily vaginal injections of a saturated solution of alum. At the menstrual epoch, all local remedies are suspended, but continue the iron.

Two cases of retroversion of the uterus have come under my observation. The symptoms of each were nearly identical.

They complained of severe periodical pains in the lumbar region and small of the back. Anodynes had no effect excepting transitory in relieving the paroxysms. Upon a digital examination, I found the os patulous, and pointing to the symphisis pubis. The fundus of the uterus was retroverted upon the hollow of the sacrum, impinging much upon the rectum. The fundus was much hypertrophied, and unduly exalted in sensibility. My manipulations caused intense suffering. I reposited the organs, by pressure with the finger, within the rectum upon the fundus. This was all the interference necessary. Several cases of freezing have come under my observation, two of which terminated fatally; reaction in one was never established. In the other there was a hyper-reaction, delirium, and death. I believe nearly all the fatal cases could be traced to a too liberal use of some alcoholic stimulants. The fact, in my mind, is established that they all impair the calorific process; that the system can bear up longer under extreme low temperature without them than with them. Will the Society explain to me the pathology of freezing? Is its action chemical only? By destroying the endangium and all the essential properties, does the heart cease to respond to its stimuli? Are the springs of life frozen, or is its action primarily upon the the solid textures of the body?

Several cases of scurvy have come under my observation. They have all occurred among the poorly-clad and illy-fed of our city. My treatment has been fresh vegetable diet, lemon juice, and the sub-acid fruits, where circumstances would admit of their being procured. I ordered, before each meal, acid aromat. sulphuric; also warm ablutions to the skin.

Croup and convulsions have been frequent among children. I have had but little experience in the former. In the latter, have used chloroform, preceded by the hot bath, always with success.

There have been many cases of bronchitis, pneumonia, and pleuro-pneumonia, and congestion of the lungs. Several cases of the latter have terminated fatally. Tubercular consumption has abounded far more this year than last. There

was an increase of twenty deaths this past January over last year's. I ascribe the cause to the exceeding low temperature, on the poorly-protected of our city. Much has been done in the milder form of this disease to alleviate and stay its onward march, but in the advanced tubercular variety, that healing cordial we have yet to find.

There have been a number of cases of diphtheria. They were all of the asthenic variety, having the well-marked aplastic exudation, and all required strongly supporting treatment.

More severe cases of surgery have come under my observation than heretofore. One interesting case of fracture of the lower jaw, treated successfully by silver wires passed around many of the teeth. The case made a good recovery by this method. The fracture was transverse at the symphisis, and at the ramus of the jaw. I have had a number of cases of compound comminuted fracture of the limbs. They were principally railroad accidents, and required amputation.

Selections.

ON THE THERAPEUTICAL APPLICATIONS OF THE SOLUTION OF THE PERMANGANATE OF POTASH, AND OF OZONE.

By SAMUEL JACKSON, M.D., Emeritus Prof. of the Institutes of Medicine in the University of Pennsylvania.

In looking over, last spring, Bouchardat's *Annuaire de Therapeutique, &c.*, for 1863, I met with the statement "*L'eau ozonisee anglaise est une dissolution de permanganate de potasse* 2, *eau* 1000," p. 95 (that the ozonized water of the English is a solution of the permanganate of potassa, in the proportion of two parts to 1000 of water).

Pincus an others had already established the disinfecting and deodorizing properties of the solution of this salt. These notices suggested to me the thought of testing its therapeutic actions and practical application. My observations were com-

menced in April; but confined to my office, my investigations were, of course, limited.

Having prepared the solution according to the above formula, I proceeded to ascertain its sensible properties on myself. It had no proper taste, but gave a sensation of coolness in the mouth, leaving behind a slight styptic feeling and dryness, which continued for an hour or more. Taken in the dose of a teaspoonful, slightly diluted, three times a day, it produced no prominent symptoms. It caused no inconvenience; there was some increase of appetite, which, however, was good, and an easier digestion. A diuretic action was obvious; there was no general excitement, increase of temperature, or frequency of pulse. A few days after I prescribed the solution in a case of dyspepsia, attended with loss of appetite, disordered digestion, and extreme lassitude. A teaspoonful in half a wineglass of water was directed to be taken four times a day. In a few days the patient called to report a complete recovery.

Four cases of a similar character were treated in the same manner, with a prompt and successful result.

In only one slight surgical case have I been able to test its effects. It was a foul ulcer of moderate size on the left leg, the veins being varicose. The solution was given internally, and directed to be used as a wash several times a day, walking to be avoided as much as possible, and the leg to be kept up. In a week the patient presented himself, the ulcer healthy, rapidly cicatrizing, and his appetite and digestion restored, with improved health.

The following case is of a more decided character. A young medical friend living in the country called to consult me respecting his health. He presented a complete cachectic aspect. His skin dry and cool, face pallid, no appetite, irregular digestion, very feeble, with eczema of hands, feet, and slightly on the face. I mentioned to him my experience and that of my friend Dr. F. Hinkley, Assistant-Surgeon U.S.A., at Campbell Hospital, Washington (to be noticed immediately), and asked him to give the solution of the permanganate of potash a trial. The following extracts from a letter received about a week after, gives the following results:—"A week or more has elapsed since I commenced taking the medicine you gave me, and so far as my appetite and strength are concerned, I know it has done me much good, and I shall continue to take it and give it a fair trial; it has aided my digestion and given tone to my stomach. The quantity of my blood appears to have been increased and its quality improved."

In answer to a suggestion I made in a letter to him, that he was probably too hasty in his conclusions, as the last effects mentioned could hardly have been produced in so short a time, and the facts would be better than inferences, he states, "My observations were based on the following facts, whether the time be short or long:"—

"My cheeks had more *color* in them than ever before, for, if you recollect, I have a pale-looking countenance usually. At the time of writing to you, I began to appear plethoric, and felt remarkably well for *me*, whereas, before I took the medicine I was anæmic. From the above facts, I was led to assert that it improved the quality and quantity of the blood. In regard to my present state of health, the eruption on my hands and face has almost disappeared, on which I have used the solution as a wash twice a day; but my feet, on which I have not used it, are in the same condition as they were originally, no change. Other symptoms about as they were when I wrote you first."

The following case has special interest. A gentleman advanced in life, had been affected last spring with a persistent sense of burning in the urethra, without discharge or apparent inflammation. He was under treatment by Dr. M. M. Levis, who brought him to my office. After six or seven weeks he was relieved. In September he noticed increased secretion of urine, which compelled him to rise several times in the night. In the beginning of October he called on Dr. Levis, who examined the urine. The specific gravity was 1036; it was found to contain mucus in considerable quantity. October 12th, a consultation was held at my office, when I suggested a trial with the solution of the permanganate of potassa. This was adopted, and no other remedy employed. November 5th, the Dr. called and informed me that a complete cure had been effected. The urine had gradually diminished in quantity, and was at that time entirely normal in character.

The following statement of the weekly examination of the urine was given to me by Dr. Levis:—

	Specific gravity.	Quantity in night.	Mucus.
Oct. 12 . .	1036	3½ pints	Large amount.
" 19 . .	1033	2 pints	Less amount.
" 26 . .	1026	1½ pint	Still less.
Nov. 4 . .	1023	1 pint	A trace.

This gentleman has since made a journey of several hundreds of miles without inconvenience or any return of the affection.

The above are the results of my own observations of the

therapeutic action of this remedy. But the most remarkable and almost marvellous effects are its prompt, in most cases, its immediate action in the treatment of gangrenous wounds in the Campbell Hospital in Washington, and the United States Jarvis Hospital, Baltimore.

On the 19th of May, my young friend, Dr. F. Hinkle, of Marietta, Pa., called on me in passing through the city. He informed me he, was Acting Assist-Surgeon U.S.A., and was then stationed at Campbell Hospital, Washington. In the course of conversation on his medical and surgical experience, he mentioned the number of cases of gangrenous wounds, particularly in the wounded at the battle of Fredericksburg, the difficulty of treating them, and the ill success of the treatmnnt pursued. I informed him at once of the observations I had been making with the solution of the permanganate of potassa, and proposed to him to give it a trial. Having a conviction that ozone existed in the solution, I was strongly impressed with the belief that it would be found adapted to such cases. The Dr. at once acceded to my proposition, and obtained the salt at Mr. Blair's on leaving my office.

On the 25th of May I received a letter from him of date 24th, in which he informs me that "in reference to the treatment of hospital gangrenous wounds and gangrene, it has already proved beyond all description efficacious. In the action of the remedy you proposed I find more than I expected, and almost all I could wish. I now give you a prominent case as an illustration of its valuable effects and the instant change produced by its local application and its internal administration, upon the general character of the whole case:—

"The description of the case will be limited merely to the immediate action of the solution on the gangrenous wound. Michael Hoyau, Sergeant, Co. D, 11th Regt., Mass., aged 35; wounded May 3d, 1863, at the battle of Fredericksburg; admitted to hospital May 8. An extensive gunshot flesh wound had been received at the upper fourth of tibia and fibula of the right leg. The integuments for the space of four inches in length and three in breadth, had sloughed from gangrene, leaving at this date, May 23, the tibia exposed for three inches. The whole of the leg and up to the middle half of the thigh is infiltrated with a putrid sanious liquid and pus. The discharge is nearly a quart per diem.

"The left thigh had been penetrated by a minie ball at the commencement of the popliteal space. A considerable amount of fluid had gravitated back of the knee-joint, which was a

source of great suffering. This was relieved by a counter opening giving a free discharge of the fluid. The treatment was commenced May 23, 7 A.M., at which time the situation of the patient was very critical. Pulse was thread-like and 96. Face pallid with anxious expression; head covered with cool sweat. The general temperature below the natural standard; had slept five hours in the last twenty-four. The gangrenous surface looked badly, had a dark green aspect and flabby, exuding a sanious liquid mixed with debris of dead tissues. The odor was pungent and highly offensive. The whole leg and thigh appeared as though melting into this fluid.

"The following treatment was adopted according to your suggestion:—℞.—Per mang. potassa ℥j, acid. sulph. gtt. xx, aq. comm. Oij.—M. A teaspoonful was given every three hours in a wineglass of water. The gangrenous parts were washed with the solution externally and internally, and charpie soaked in it was kept continually applied, being changed as often as the dressing became saturated with the discharge, or, when that was checked, when it became dry.

"The effects on the gangrenous tissues were instant. The flabby, sloughing and indolent surface immediately dried up, and in a few minutes presented the appearance of a wound to which a solution of nitrate of silver has been applied; or that of a delicate eschar from a slight burn, yet it gave no sensation of pain. In three hours the odor was greatly lessened, and in less than 24 hours it was barely to be perceived.

"In at least fifteen other cases of gangrene, such as of stumps of limbs, etc., its actions was no less efficacious."

The Doctor concludes:—"I am already assured that it (the solution of permang. potass) is of the greatest value in cases as above mentioned."

I received from the Doctor a communication inclosing the history of ten cases of gangrenous wounds treated in Jarvis United States Hospital, Baltimore, with the solution, and in all the gangrene was promptly arrested. He also describes the mode of application which he has found the most useful from his extended experience.

He also informs me that he is making out a report to the Surgeon-General on the permanganate of potassa and its uses. In this he will give the history of the numerous cases—I believe now nearly one hundred—of different affections in which he has employed it. A duplicate, he states, will most probably be published in the *Medical Times*, to which I refer for a full confirmation of what I predicted, from my limited experience respecting

the therapeutic action of the solution of the permanganate of potash. I have a strong conviction that science has acquired in this agent a remedy of active powers, of extensive application, easily procured at a small cost, and which can be used without apprehension of risks to be incurred.

From the decided therapeutic action obtained by the practical employment of this solution, especially in the United States Hospitals by Surgeon Hinkle, it became a matter of interest to ascertain its active principles. With this view I tested it for ozone. I had prepared Scoutetten's ozonometric starch and papers. The following is his formula:—

Distilled water	100 gram.
Finely-powdered starch . . .	10 do.
Iodide potassium	1 do.

The iodide of potassium is to be dissolved in the distilled water, and the starch powder is to be mixed in the liquid; when the mixture is finished it is to be placed in a porcelain capsule over a gentle fire, and constantly stirred with a glass rod until it assumes the pasty consistence of the domestic starch. This may be spread on paper; common letter or writing paper is to be preferred. It is then to be cut into bands and kept in a bottle or box.

I employed at first the recently prepared starch. Small portions were placed on a porcelain capsule and a few drops of the solution mixed with the test. A beautiful blue color was instantly developed, after a few minutes passing into a deep black. It compared with No. 10 the highest figure of the ozonometric scale. As ozone obtained by the usual process is not very soluble in water, olny about 6 per cent, and does not produce it reaction as rapidly or as decidedly as the permanganate solution, this last must contain a much larger proportion than could heretofore have been employed. Another difficulty was that the former solution was not permanent; it seldom retained its properties over forty-eight hours. In the first trials made I added a few drops of sulphuric acid to keep up a gentle chemical action by which ozone is generated. But this was soon found to be unnecessary, as I ascertained that the permanganate solution exposed for three to four weeks in a capsule to the air lost but little of its power on the ozonometric test.

A short account of the present state of our knowledge of oxygen and its modified or allotropic states is indispensable for the understanding of the mode of action of the solution of the permanganate. In 1842, Schœnbein discovered what he at first

supposed was a new elementary body, which from its odor he named ozone. Fremy and Becquere, demonstrated it to be oxygen, the properties of which were highly intensified. This view was generally adopted. Schœnbein, from his investigations, ascertained that peroxide of HO^2 could not be produced from either oxygen or ozone, and he assumed hypothetically that there must exist another body in relation to ozone, which he named antozone. They are noted by the symbols $\overset{ox}{\bigcirc}$ $\overset{oz}{\ominus}$ $\overset{ant}{\oplus}$. These facts confirm the views of Mr. Faraday, that oxygen is an allotropic body, capable, like carbon, sulphur, and phosphorus, of taking on modified states, differing in their physical and chemical properties.

"The most important distinctive property of antozone $\oplus$," Schœnbein states, "is the readiness with which it unites to water, to form the peroxide of hydrogen." Ozone exists in the gaseous state, and is always existing in varying quantities in the atmosphere; it is also held in solution by water. It is formed over the surface of water, whether the immense extent of the ocean, lakes, or rivers. It is resolved or converted into passive oxygen by the various oxidizing actions it effects on effluvias, and other contaminations of the atmospheric air. It is also the active agent in bleaching and in chemical actions of the animal organism, oxygen being changed into ozone by the chemical actions in constant activity in the pulmonary tissues and capillaries during respiration.

Schœnbein was desirous to obtain antozone in an insulated or free state. With this object, he directed his attention to the set of peroxides, which he named antozonides, expecting to eliminate from them that kind or part of oxygen, he supposed to be $\oplus$ antozone. As a general result, he found "that whenever ozone $\ominus$ makes its appearance $\oplus$ antozone and its equivalent, HO—$\oplus$, are present. The rule applies also to a number of organic substances, and occurs during the electrolysis of water, never ozone without the peroxide of hydrogen, or antozonic water HO+$\oplus$."

After many unsuccessful attempts, he has obtained his object in a most unlooked-for mode, which he communicated in a letter to Mr. Faraday. A dark blue fluor spar has been long known to German mineralogists. It is remarkable by its property of yielding a peculiar and disagreeable smell when triturated. The nature and cause of this odor had never been settled. The spar occurs in a vein of granite. "A German chemist sent a specimen of it" to M. Schœnbein, "asking him to try his luck

in ascertaining the nature of this smelling matter." In this attempt, he showed and proved it to be the antipode to ⊖, ozone imprisoned for thousands of years, waiting for some one to recognize and set it free. Surprising as it may seem to you, and unique as the fact certainly is, that odorous matter is my insulated antozone, which had so long baffled his researches. "How that subtle matter got into the spar, I cannot tell."*

With these facts before us, there can be but little doubt as to the composition and active principles of the solution of the permanganate of potash. Besides the salt, ozone, or active oxygen, and the peroxide of hydrogen, or, as it ought to be designated, antozonic water, HO+⊕, are also present. The last two are bodies endowed with most active chemical properties, which are brought into action on the decomposing organic structure in gangrenous wounds. The disorganizing process is arrested, the organic or vital actions of the surrounding tissues, reduced to the lowest ebb, are roused into activity, and the fluids are renovated by the exciting and oxygenating properties of ozone and oxygenated or antozonic water. The essential conditions of vital organizing reaction are in this mode locally renewed, and a healing process established.

Taken internally, it enters the blood, and excites the molecular or chemical action of that fluid—an indispensable condition of life. The cessation of those actions is immediate death—it is the mode by which carbonic oxide occasions nearly instant death. These exciting agents, it is most probable, produce also arterial tension, now demonstrated to be the regulator of the capillary or nutritive and vital circulation.

We have the evidence of Gorup Besanez that ozone exerts a kindred action on organic substances. Albumen and casein are changed into products similar to those effected by digestion. Fibrin, it is stated, resisted its action. Should this fact be confirmed, it would show some special chemical distinction between it and albumen, contrary to the observations of M. Cl. Bernard and other physiologists, who regard them as mere transient states of the same substances mutually passing into each other. It had little or no action on urea, allantoin, kreatin, sugar of milk, and hippuric acid—bodies of more stable composition. Bile absorbed ozone and lost its color; its mucus was decomposed.

As bromine has been found very successful by Dr. Goldsmith and some of our surgeons, in the treatment of gangrenous wounds, it occurred to me that probably its solution in water

* Philosophical Magazine, 4th series, Vol. XXI., p. 88.

might develop ozone and antozone similar to the permanganate of potash. I procured a solution of gr. xv to ℥ij of water. With the ozone test it instantly struck a fine blue color, which in a few minutes became of a deep black. From the volatility of bromine great care is required to preserve it for any length of time. The above proportion of bromine is far too strong for internal use. A formula proposed by Ozanam in 1860, makes a preparation that is permanent, and may be employed internally. It is as follows:—

Bromine, pure . . .	10 centigram. 2 drops.
Bromide of potassium . .	10 do.
Distilled water . . .	100 gram.

M.

This solution gives a deep blue with the ozone test, which soon passes into black.

From the similarity between bromine and chlorine, I was led to test the latter with the ozone test. A drachm of chloride of lime was put into a pint bottle and a few drops of sulphuric acid aided; in a few moments the bottle was filled with chlorine. A dried test paper was then introduced; it assumed in a few moments a bluff color; when the paper was moistenedit instantly changed into the blue color, which soon became black. When the moist paper was introduced these changes took place in the shortest period.

The test paper acted on by the solutions of permanganate of potash, bromine, and chlorine exhibited equal intensity of color; they could not be distinguished.

These facts appear to indicate ozone or antozone as the active principle of the solution of bromine as well as of the permanganate of potash and chlorine.

ON THE CONSTITUTION AND SOURCE OF THE BILE.

By THOMAS ANTISELL, Surgeon U.S.V., Professor of Physiology and Mil. Surgery in the Medical Department of Georgetown College, D.C.

During the autumn of the last year and the past spring, having had the opportunity of making *post mortem* examinations of patients who had died of what is commonly known as chronic diarrhœa, and finding the gall-bladder (as might be expected in such subjects) distended with bile, it appeared to me that the application of dialysis to this liquid might determine something

new regarding either its constitution or uses, and go to settle some of the obscure and doubtful points in its natural history. It must be admitted that this mode of dialysis has much to recommend it as a means of investigation of animal liquids, for it permits of the examination of the animal fluid while yet in a fresh state, and by using the microscope in connection, enables us to observe the substance itself by the eye, and recognize the form. Nothing is more satisfactory than the appearances of chloride of sodium and phosphates of potass or soda, of glycocholate of soda and hæmatoidin, of cholesterine, nucleating cell and epithelium.

The mode of examination was to place the outer liquid in a quinine bottle, and suspend the cleaned gall-bladder by a wire hung from a cork with which the bottle is closed. The bladder holding the bile was allowed to remain in the liquid 30 to 48 hours, at a temperature of 70°, then taken out, wiped dry on the outside, and placed in another vessel similarly fitted up, containing a second liquid; from this, after 30 hours, it was again removed, wiped, and placed in a third, and subsequently in a fourth liquid. I have used alcohol (86 per cent), ether, chloroform, and coal oil as the fluids best adapted. In this way, by suspensions for periods varying from 24 to 48 hours, I have separated all of the component principles in the supernatant bile (when it is allowed to rest), except the mass of epithelium, granular corpuscles, and mucous corpuscles, which do not osmose into alcohol.

The alcoholic liquid, after dialysis of a few hours, assumes an amber-yellow color, which sometimes deepens to a brown if the amorphous coloring matter of the bile be abundant. The ether and chloroform liquids are usually of a yellow-green tint, from the amount of yellow coloring matter held in suspension.

The ethereal liquid contained yellow pigment granules in great abundance, with some fatty globules, margarate soda, mucous corpuscles, and a few crystals of hæmatoidin.

When alcohol is used as the first liquid, the great portion of the liquid fatty matter passes into it, and if fresh alcohol be used to replace that deeply colored, almost the whole of the fat globules may be removed; in this way, separation between the pigment cells and fat globules may, to a great extent, be accomplished. As the bile is a fluid easily decomposed by exposure to air, the ordinary experimental dialyzer of parchment paper was not employed, the gall-bladder allows permeation to proceed in a very rapid manner, and to a considerable extent, and by its use the transfer of the liquid is avoided, the change from

the condition when removed from the body a few hours after death is very slight. I therefore used the bladder without any transfer of its contents. I may state here that in the examination of the dialyzed liquids, oxidation is likely to occur, but this may be greatly, if not wholly, prevented, by the addition of creasote to the liquids. I have in this way preserved these liquids for three weeks in the *statu quo* they were in at the commencement of the experiment. Creasote has been recommended by Dr. Beale for this purpose in the examinations of the urine. I recommend it in all examinations of bile.

Having mentioned so much of the mode of examination, I will as briefly as possible state the results under the various heads of investigation.

Quantity of Bile in Gall-Bladder.—In ten specimens examined the greatest amount was 28 drachms, and the least 4 (four) drachms; six were above 12 drachms. Those which distended the gall-bladder the most had an unusual amount of common salt present.

Density.—Varied from 1020 in least amount to 1010 in that amounting to 3½ oz. As the bile is a very heterogeneous liquid, containing matters in solution and in suspension, the specific gravity gives no real information of the true disposition and mode of escape of the solid matter. When fresh bile is allowed to stand for six hours it separates into two portions—a clear, dark yellow-green liquid, and a substratum of a deep yellow tint and syrupy consistence; by separating these two layers by decantation and evaporation of both in a water bath until no further loss is appreciable, an approximate result of the relative anount of solid matter in each stratum may be obtained. I examined, in this manner, the bile amounting to 28 drachms:—

The solid matters in supernatant fluid =	6.25	per cent.
" " in syrupy substratum =	4.15	"
Total solid matters in bile =	10.40	"

Constitution of these Liquids.—The two strata alluded to yielded very different results when examined. The clear fluid has a simple composition, faintly alkaline, albumen in solution not precipitable by heat alone, but by the addition of nitric acid along with or after being boiled; the liquid becomes pinkish when heated; it contains all the soluble salts of the bile. The lower stratum contained all the organic and organized substances mentioned further on. Columnar epithelium is the only substance common to both strata.

Proximate Elements of Bile.—The results of repeated examinations of these specimens, fluid and deposit, both under the microscope, as well as by chemical tests, has led to the following list of substances being observed as constituents:—

1. Epithelium.
2. Mucous Corpuscles.
3. Pigment Cells, yellow or greenish.
4. Brown coloring matter, resinoid and amorphous.
5. Cholesterin.
6. Fatty Globules.
7. Common Salt.
8. Carbonic and Phosphate Soda (neutral) and Potass.
9. Glycocholate Soda.
10. Margarate Soda.
11. Hæmatoidin.
12. Hippuric Acid.
13. Albumen.

It was not, of course, possible to determine the presence of all these in each specimen at first, as very many of the substances, from eight to twelve, exist in very different quantity, and if not looked for closely are apt to escape observation altogether. Under the microscope what is usually seen at first are the two varieties of pigmentary matter, the cholesterin and fat globules; the common salt will be found round the margins of the drop under observation, as beautiful Maltese crosses or dagger forms in the natural fluid; in the alcoholic extract the dodecahedron and cube forms of salt are very common.

Cholesterin and Fats.—The alcoholic liquid contains some epithelium and mucous corpuscles and abundant fatty globules. The latter is the chief constituent in alcohol. When this liquid stands over one day crystals of cholesterin appear; these are not regular in form, having the angles wanting; regular crystals may be obtained by re-solutions and cooling; the other fatty matters always appear as globules, clear and transparent, being much larger than the yellow-green pigment cells. I have not observed any further change of fats in the alcoholic fluid, although in ether (when cholesterin has been separated by the alcohol) silken tufts or sheafs of margarate soda are recognizable. I may remark that in all my examinations of recent bile, I have never found cholesterin as an ingredient; but when the sample in the field has stood a few hours, or if the bile itself be exposed while recent to the air, cholesterin is then found in small broken plates, similar to what may be removed from the substance of the liver by crushing a few cells and examining under the field.

The cholesterin of bile is either held in solution by the other fatty matter, or it is as yet undecomposed and a constituent of the original fat—one of the steps in the decomposition of which

is to form cholesterin. However this latter may be, it is not an evident constituent of fresh bile; when the alkaline nature of the liquid from any cause is diminished, then this substance commences to appear. We can at any time produce it by adding a drop of acid (acetic or mineral) either to bile or to the crushed bile cells, when the fatty matter will be broken up and one of the resulting products is cholesterin. I do not mean to assert that cholesterin is not present, but simply not present in a free state—it is held in solution probably by the more liquid fats; for inasmuch as cholesterin is not a formation of the liver itself, being the product of decomposition of nerve matter in the blood, and merely separated in the liver—as it is sometimes in serous fluids not sufficiently alkaline—it is reasonable to conclude that its appearance in bile which has been exposed to the air or otherwise oxidized, is an evidence of its pre-existence in a soluble form.

Yellow Coloring Matter.—This substance dialyzes the most readily of all ingredients, passing into all of the liquids in the outer vessel; freely into alcohol, more so into ether, chloroform, and coal oil; the chloroform liquid is the most convenient for examination, but coal oil preserves the matter unchanged. The liquids have all a more or less green tint, the ethereal liquid being the deepest. Fatty matter always accompanies the coloring matter.

When examined by a power from 300 to 400 times, the structure of this substance is evident; cells globular, deep yellow color in mass, aggregated in cloudy clusters, the globules having apparently granular contents; these however are fatty matters, as treatment by alkali and acids shows, and this is the reason why it is impossible to separate by dialyses the fatty globules from the yellow-green matter. These globules become of a deeper green on addition of a little nitric or other mineral acid.

It is not further affected by nitric acid, and does not yield the iridescent tints which bile matter affords. It is not soluble in alcohol or ether, but by long contact with these liquids the cell wall becomes broken or collapsed and the fatty matter dissolves in the alcohol or ether; perhaps this is effected by osmose through the cell wall. Alkaline solutions also separate the oil, but in this case the cell wall is dissolved, and the liquid assumes a slightly red tint, showing the presence of a protein compound in the cell wall. The yellow pigment is then a globular corpuscle having an albuminous pellicle and fatty substance in the interior. I am unable to state whether the color belongs to the wall or the central contents.

Lehmann states that this pigment is amorphous and colored red by acetic acid. In every instance I have assured myself of its cellular character, nor have I observed its being reddened by acetic acid.

Oil Globules.—Minute oil corpuscles may be seen in great abundance in the ethereal and alcoholic liquid dialyze; of all liquids alcohol appears to favor the dialysis most apparently. As there are no free oil corpuscles in bile, its appearance on dialysis is due to the liquid acting on the yellow globules, and causing the fat to osmose; the greater portion of the fat, if not all, comes from the yellow pigment cells; globules of fat are also found attached to and escaping from the surface of cholesterin crystals, if the latter be treated by dilute sulphuric or chlorhydric acids; these in a little time disappear, and thin prismatic crystals with flat summits are formed in the vicinity. By the actions of these acids on the pigment cells tufts of silky needles of wheat-sheaf form occur scattered through the cloud of pigment.

Margarates are the fats of the pigment cell, while that obseved to escape from the cholesterine is a glycocholate; this is proved by treating the field with strong sulphuric acid, when this glycocholic acid is broken up and an occasional hemihedral crystal of *glycin* is formed.

This (distinctive) separation of the two fats must not be looked upon as existing naturally. The cholesterin must have been previously in a fluid form to be secreted, and must have passed through the hepatic cell and most likely through the pigment cells. All the fatty acids must originally have been associated and some of them conjugated.

On the treatment of these fats with acid I have never observed any form like the crystal of *taurine* or of taurocholic acid, nor any substance having the reactions proper to that acid; from my own observations I conclude it is not present in human bile, and I am not aware of any competent authority having asserted its presence. Glycocholic acid is, I believe, the true biliary acid in the human subject, and is occasionally found uncombined in bile freshly removed from the recently dead.

Dalton asserts that in human bile there is no crystallizable substance; if by this he means bile in the living subject it may be so, otherwise it is totally at variance with what I have repeatedly observed, so frequently that I do not remember one example in which I did not find it in the dialyzed liquid, where the liquid had been kept for a few days. Among the green pigment corpuscles small prismatic crystals begin to appear—four

sided—with flat summits rarely overlapping, each well defined throughout; they are not seen at the same time with the pigment cell, but when the mill head screw is turned slightly, so as to approximate the stage, they then become quite distinct; they average 1-100 inches long, and at first view many appear to have the summits bevelled or dihedral, but careful observation will correct this deceptive appearance; they are always found most abundant with the greenish pigment; untreated by reagents they preserve their form for a considerable time; under the influence of acids they disappear, and as stated before, an occasional small crystal of glycin appears with a few drops of oily matter around it.

Sources of the Morphotic Elements.—No one who has examined the hepatic cell filled with bile, and also the pigment globules of the bile itself, can hesitate in recognizing the latter as the corpuscles of the hepatic cell; they are exactly alike in form, size, color, and consistence; they both yield fatty matter as well as coloring material, and both by aeration pass from yellow to green; both are slightly soluble in alcohol, more abundantly in ether, chloroform, and coal oil, and they do not undergo any other alteration by nitric acid in the cold than to produce the green tint. I assume it, therefore, that they are one and the same body, and that the contents of the hepatic cells are thus emptied out and delivered by the efferent ducts into the gall-bladder.

Besides these corpuscles, nuclei are seen in abundance loose among the clouds of pigment and the crystals of cholesterin; these are of larger size than could well be accommodated within the epithelial cells, and indeed these latter show little tendency to change the nucleus, being distinctly recognizable at the attached or smaller extremity; the larger free nuclei, therefore, belong to the hepatic cells, from which they have escaped along with the pigment cells; the cholesterin and other fats also escaping separate in a crystalline form.

From this it would appear that the whole contents of the hepatic cell is carried away; what, then, becomes of the cell wall? We must look upon the *brown* coloring matter as a residue of the cell wall, an altered protein substance, soluble in alkalies, not soluble in acids, assuming a violet, blue, and finally red-yellow tint by nitric acid, and showing all of the reactions by color which the bile is known to do with reagents; the play of colors of the bile is not, however, monopolized by this body, but is also given by the unaltered and partially disintegrated columnar epitelium floating in the liquid. These can by the

microscope be distinctly seen to become purple and blue on the addition of niric acid.

Brown Coloring Matter.—This substance is readily recognized under the microscope, as appearing in masses of various sizes, rarely exceeding that of a blood corpuscle; opaque, except at the edges, where it is of an amber tint, without any trace of structure; not altered by acetic or dilute acids; soluble in alkaline solutions by warmth, and by nitric acid moderately strong, which forms an amber-yellow solution with it; producing previously the various tints of color, blue, red, and brown; the dry mass, heated on platinum foil, swells up and fuses, and in a close tube gives off ammoniacal vapors. It, at first, by the reaction, might be mistaken for a resinous substance, but is a true albuminous or protein compound in various degrees of degredation. Under certain conditions the decomposition results in the production of crystals of *hæmatoidin;* at least this latter substance has been found in situations where no other nitrogenous substance was present to produce it. The appearance of hæmatoidin has, among other considerations, led physiologists to describe this brown substance as arising from effete blood corpuscles, separated from the portal blood by the cells, and carried down by the efferent vessels; but after repeated examination, I have never found any appearances justifying this belief; this brown substance is *not found in the hepatic cells nor in the substance of the liver;* it is in the *bile* of the ducts or the gall-bladder that it is detected, and bears all the marks of being the cell wall of old and broken-down hepatic cells whose contents have previously been removed.

Hippuric Acid—Hæmatoidin.—These substances I have met with, one example of each, in the twenty specimens examined; I shall not offer any considerations here about their appearance.

This mode of examining the bile by dialysis and microscopic examination of the dialyzed liquids must, if supported by other observers, lead us to reject the present view of the functions of the liver as a secretion, and of the nature and sources of the bile. We must adopt the view that the bile is simply an excretion, and its formation an act of depuration of the liver, whereby it relieves itself of its own effete parts. This is the view of Dr. Draper when he writes:*—"I therefore regard the bile as an excretion of materials which are decomposing and ready to be removed from the system." But he and others suppose that the waste materials come from the *cells of the blood*, and that the blood is thus purified by the removal of degraded blood

* Human Physiology, New York, 1856.

cells in the liver. I do not say this does not occur; but it forms no appreciable amount in the contents of the bile. It is not the blood cells, but the *liver cells* which form the solid matter of the bile; the hepatic cells, their contents, and the degraded cell wall form the great bulk of the morphotic elements; columnar epithelium, in all stages from integrity to decay, mucous corpuscles, and perhaps a little tessellated epithelium, formed the remainder; rare is it to find a trace of a blood cell in any degree of decomposition. It is not from blood cells, then, nor from venous blood directly that the bile is produced, but from a *wearing down of the tissue of the liver*, removing the hepatic cells, in a ruptured and worn-out state, by the only channel through which solid matter could be removed; that is, by the bile ducts. If it be true, as put forth by some, that the open mouths of the ducts directly touch the hepatic cells without any intervening membrane, then the mode of escape is apparent; the cell nearest the extremity of the duct ruptures, and pours its contents down into the latter, and thus leaves a space for other cells in similar effete condition to repeat the process.

If the bile, then, is but an excretion, what is the function of the liver? The explanation which I have given of the constitution of bile, and its probable origin, does not alter in any degree our notions of the action of the liver, which is to purify the portal blood by removing from it the cholesterin, fatty acids, and pigments by means of the hepatic cells, and also to separate sugar to be restored again to the blood.

In separating the fatty matters it would appear that the structure of the liver itself suffers, and requires to be removed, and it may be that this removal of the hepatic cell, after they have fulfilled their secretory functions to the utmost, by the bile *is the healthy process*, and that fatty degeneration of the liver may consist, not merely in an increased growth of hepatic cells, and their granular contents becoming loaded with oil, but in the circumstance that the cells are not removed as fast as produced; that by some altered condition of the cell wall it is not ruptured and the cell contents delivered into the bile ducts; this is a point to be determined by future observation alone.

The following conclusions are, I think, fairly deducible from the above:—

1. The bile is an albumino-serous liquid, holding diffused organic and organized matter, whose structure and origin may be traced by microscopic investigation.

2. The organized matters are derived from the *hepatic cells*—chiefly its inner granular matter—and from the epithelium lining the bile duct.

3. The fats of the bile are the fats of the bile cell derived from it, and have suffered no alteration, except their escape from inside the cell.

4. The bile contains two distinct coloring matters, the yellow and the brown; both of cellular origin, the latter only in a state of decay.

5. The yellow coloring matter of the bile is an organized body—a cell containing cloudy granular contents, which furnish fatty matter by decomposition; the fatty acids being the margaric and glycocholic, associated with cholesterin and soda; these yellow corpuscles are the yellow corpuscles of the bile cell.

6. The brown coloring matter is a protein compound, an albuminous substance undergoing decomposition, and is probably the remains of the cell wall of the hepatic cell whose contents constitute the matter described in No. 5. It is this brown matter which, by treatment, with nitric acid, yields the play of colors used as a test for the presence of bile.

7. The bile contains both the *materials* removed from the portal blood and the *anatomical structures* by which the removal was effected; the latter in a stage of retrogressive metamorphosis.

8. The bile is an excretion—a depuration of the liver directly, of the blood remotely.

As all of the specimens of bile alluded to in this paper were taken from diseased subjects, it may be objected to any inferences drawn that the bile does not represent that in health; as, however, the object of this paper is not so much to describe the chemical characters of normal bile as to show in what form the substances are actually found in human bile, the objection can have but little force in this place.

THE FRENCH SYSTEM OF MEDICAL EDUCATION.

In view of the interest excited by the suggestions for the improvement of medical education recently put forth by Professor Syme on behalf of the Scottish branch of the Medical Council, and as it is understood that the subject of further reforms in medical education is likely to be subsequently and warmly discussed by the General Council, it may not be *malapropos* that I should give you an outline of the system of study pursued under the direction of the French Government.

There is but one degree for doctors in medicine or in surgery. For this degree five examinations must be undergone before the Faculty. These consist of—1st. Anatomy and physiology, with the test of dissections. 2d. Internal (medical) and external (surgical) pathology, with the performance of operations. 3d. Materia medica, chemistry, and pharmacy. 4th. Hygiene and legal medicine. 5th. Medical and surgical clinical tests, and accouchements. The examinations are public; and the law provides that two of them shall be in Latin, but this has fallen into disuse. After the five examinations, the candidate for a degree must present and defend a thesis written by himself in French or Latin. Before, however, the student can reach the point at which he is admitted to any of these examinations, he has a long ordeal to pass through. Prior to commencing his career by "taking his first inscription" at the Faculty, which is equivalent to what is known as "entering" at the London schools, the student must produce his diploma as *bachelier es lettres*, or bachelor of arts; and before taking his third inscription (the inscriptions are for three months each) he must produce his diploma as bachelor of sciences. A modified diploma of bachelor of sciences is granted to medical students, which is especially adapted for them only. The student usually enters at about the age of twenty or twenty-one. He has to take a fresh inscription every three months, and to pass a special examination at the end of each year for three years. Thus, in addition to the five examinations for the doctorate, there are three annual examinations (*examens de fin d'annee*). These latter bear, first year, on chemistry, physics, and natural history; second year, on anatomy and physiology; third year, on medicine and surgery. Students are not admitted to the fifth, ninth, and thirteenth inscriptions respectfully, unless they have passed with success the "examination of the end of the year." They are only admitted to the examinations for the doctorate after the expiration of the last three monthly periods of the fourth year of study. The official fees for these inscriptions and examinations (independently of those for the diplomas of science and letters are, then, as follows, for the diploma of doctor:—

Inscriptions (sixteen, at 30 fr. each) - -	480 fr.
Three examinations at the end of each year (30 fr. each) - - - -	90 fr.
Five examinations, at the conclusion of four years' study, (50 fr. each) - - -	250 fr.
Five certificates of ability (40 fr. each) -	200 fr.

Thesis, - - - - -	100 fr.
Certificate of ability, - - -	40 fr.
Diploma, - - - - -	100 fr.
	1260 fr.

The fees for dissection and for unofficial courses which he has to take come to almost as much.

As to hospital practice, it is prescribed that no one shall be able to take his degree unless he shall have followed the hospital practice either as dresser [externe] or merely as pupil during at least one year. The prescribed curriculum commences after the ninth inscription has been taken—that is to say, at the beginning of the third year; and the four following inscriptions (which are essential in order to be admitted to examination) are not delivered to the student unless he bring with him a certificate of having diligently attended the practice during that time. Thus it will be seen that the French system differs in some material respects from the English. It requires the student to enter a number of courses; but it does not require him to attend them. It only exacts from him that he shall, in a long series of examinations, prove that he has acquired the requisite amount of knowledge. It is essentially a system of examination. The hospital practice need only be registered for one year. As to lectures, they are to be paid for; but they need not be attended, and, practically, they are very irregularly attended. The professors have themselves very much to blame for this, inasmuch as the chairs are habitually employed by their incumbents for the development, at great length, of their views on particular points of the science professed, rather than the systematic and complete teaching of the whole subject in the manner and to the extent required by the student for the purposes of his instruction, and to enable him to pass the stated examinations. The courses of the Faculty, in other words, are by no means squared with the examinations of the Faculty, or with the requirements of the Faculty. Hence the system of education, which is elaborately rounded and perfect to the eye, is, in fact, so imperfect as to require all sorts of supplementary aids. The student does not trust to the professors of the Faculty for his instruction; he trusts to his books and his private teachers. These abound: every one can teach in Paris; and although they are not recognized, these teachers are not the least influential. The Faculty give an unofficial recognition to a number of these private teachers by lending them (for a consideration) the amphitheatres in which to lecture; others

are content with lecturing in their private *cliniques*, and some are on the footing of our private grinders. Necessarily with this system of excessive examination, grinding is brought to great perfection; and the whole art of studying the peculiarities of the examiners, and knowing their pet questions and the expected answers, is developed to a greater pitch of completeness in Paris than in London. The last key to the examinations is a little book published by Dr. Berton, (1863), which gives systematic tables of the questions habitually asked at the various examinations, "with the answers of the examiners themselves to the most difficult questions." Some of the general remarks are too amusing to be passed over. "As a general rule," says this astute adviser, "the professors put questions specially on the subjects which they have developed during the year; but the *agreges* examine on all subjects indifferently, unless they have a private *clinique*, or a course at the Ecole Pratique, &c. They also—all of them—manifest a preference for the questions which have especially formed the subjects of their own theses and memoirs. It is useful, then, to know eight days beforehand your series, which can always be ascertained from some one of the secretary's department, or from those of the examiners which may happen to be your hospital teachers. Not only could you thus, under proper circumstances, pay any of them a visit of ceremony, or get yourself privately mentioned to them, but, by a little asking, you will ascertain the kind of questions they put. It will be well also to find out, in point of bibliography, the works which your examiners may have published, and the opinions, more or less personal, they have adopted—an examiner being always more than flattered to find a pupil sufficiently intelligent to reproduce in his presence his favorite opinions, whatever they may be, and the more so if they be little popular amongst the majority of authors. I would advise you, even *strongly*, to follow, during the eight last days —I speak of the third of the annual examinations—the hospital visit of one or other of your examiners, in order to become intimately acquainted with their opinions, and even with their language. They can but be the better disposed to you for doing this. If they have a *clinique* in town, whether free or by payment, enter yourself at this in the same way, even if it be but the evening before the examination.

Of course all this must be taken for what it is worth; but the extreme care with which the list of suggestions are arranged and classified, and the intelligence with which the particular views of the examiners are indicated in notes, sufficiently show

that all the weak points of the examiners are diligently studied, and even their special merits used as points of vantage for the pupil. There is one great defect in the French system: it is moulded into an apparent symmetry which is not real. It pretends to be a system of public instruction and public examination. It is, in fact, a system of public examination, but of private instruction. Then the students are obviously over-examined, and must be ground up to a choking point to suit the system. Three annual examinations, five examinations for the doctorate, besides *concours* for the *internats* and the *externats* and the *prix des hopitaux*—travelling over the widest possible range of anatomy, surgery, medicine, physiology, histology, and the accessory sciences—demand an amount of absolute cramming which has a definite an undeniable tendency to produce ultimate mediocrity. I am persuaded that if Mr. Syme were to look into the *Guide et Questionaire* of M. Berton, to which I have referred, his nervous system would sustain a severe shock, and he would immediately desire to "remonstrate with, censure, or, if necessary, depose the whole" body of teachers and examiners of Paris, as loading the memories of the pupils with indigestible details, as well as running through half the rest of his catalogue of pedagogic sins. A complete course of education in Paris is eminently conducive to cerebral congestion, and must load the brains of the pupils with a mass of minute details which no man's memory could retain permanently, and which are only got up for the purpose of the one examination, to be forgotten while preparing for the next. But this is almost an inherent defect in all medical education just now; and, in that it is more particular as to ascertaining that the candidates have the required knowledge than in inquiring where they got it, many persons will think the French system, by so much, more practical than the English, which carefully regulates the means of learning, as well as tests the information acquired.

I must return in a subsequent letter, to the subject of my last—the system of medical education pursued here, and the general arrangements of the hospitals and schools. Meantime, however, not to continue without a break a subject which is not equally interesting to all, I will revert to some of the scientific and practical aspects of medicine as followed here. Of course, medicine must be understood here to include also surgery, for although recognized in fact, the distinctions between surgery and medicine are not accepted in the language or in the theory of the Faculty. Surgeons are all doctors, and physicians have also a qualification in surgery; although M. Trousseau would

not think of amputating a leg, and, perhaps, Nelaton would not prescribe for a phthisical patient. Of the latter fact, however, I am not so certain; for since surgeons are also physicians, the etiquette in this respect is by no means rigid, and here, more than in London, would apply the celebrated definition medical and surgical patients ascribed to your "Nestor" of surgery,—Mr. Lawrence,—that "surgical patients were all those patients who paid fees, medical patients all those who did not." The limits between surgery and medicine are obviously altogether artificial and arbitrary; and the difficulty is well got over here by requiring the possession of a joint degree by every practicing physician and surgeon, and leaving it to himself to determine the particular line of practice according to his bent or the force of circumstances. The line is especially difficnlt to draw in obstetric practice, usually followed by physicians in England and elsewhere, but involving a multitude of operative proceedings requiring much surgical skill.

It is precisely of obstetric operative practice that I have to speak in this letter. Dr. Marion Sims, of New York, is now practing in Paris, and as the improvements which he has introduced into what may be called the surgery of females have revolutionized that department of the art all over the world, and his procedures have formed the basis of a new and happy era in the treatment of the series of fistulæ and other diseases of women which were previously incurable, it will be interesting to give some particulars of what he has been doing here surgically since, like many other Americans, he has sought a home in Europe.

Dr. Sims had already achieved a great reputation in America and England by his introduction of silver wire sutures—certainly one of the most important surgical improvements of the century; and by his immediate application of this discovery to the cure of all kinds of fistulæ and clefts in the mucous canals. The success with which he operates on deformities and deficiencies of this kind was not, however, at first fully appreciated in Paris; and when he came over, he was asked to operate on some of the most difficult cases of prolapse of the bladder from sloughing of the tissues, and utero-vesical and vaginal fistulæ, which were known to exist in this capital. He had a triumphant success in these cases, which had been abandoned as hopeless, but which he cured with a single operation; and his reputation soon extended so greatly that he was summoned to the highest and most important personages, and the Emperor has given him a special permission to practice in Paris. It is no breach of

confidence, since the fact has already appeared in print, to mention that Dr. Sims has been consulted by the Empress, whose general health is good, but who is known to be delicate.

The great improvements which have constituted Dr. Sims's most precious contributions to obstetric surgery are sufficiently well known in England, but as he is a man who has all his life done much more than he has talked or written about I will only jot down some of the facts which I have gathered as to his practice in some matters of special interest, in which he has, without publishing, anticipated a good deal that has subsequently been published, and forms the theme of discussion.

I pass over other more ordinary fistulæ in which his simple and successful practice, with or without the complications of his pupil Bozeman, is generally followed, to speak of cases of utero-vesico-vaginal fistulæ where the neck of the uterus—more particularly the anterior portion of it—is thoroughly destroyed. Dr. Sims's method of curing the fistula is by bringing its vaginal borders together in such a manner as to shut up the cervix uteri in the cavity of the bladder. The vagina then become a blind pouch. The menses pass into the bladder, mingle with the urine, and the patient passes bloody urine during the menstrual flow. The last operation of this kind which Dr. Sims performed was in Paris, about ten months ago, and in the presence of Dr. Rayer, the late dean of the Faculty, Sir Joseph Oliffe, Dr. M'Carthy, and others. His first operation of this sort was in Alabama, in 1849. I believe it is now a recognized proceeding in London, and Mr. James Lane has lately recorded a singular case in which, even after this operation, the patient became *pregnant*, probably through the medium of some capillary communication left between the vagina and the uterus. I have not seen the details of that case, but in the latter particular it is unique. Dr. Marion Sims has performed the operation more than a dozen times, and has not seen any inconvenience from it.

You published last year a paper by the London surgeon whom I just mentioned—Mr. James Lane, "On Lithotomy in the Female bladder," in favor of the vesico-vaginal incision. Dr. Sims considers that the facility and invariable success with which a cut in the vesico-vaginal septum may now be closed suggest this as "the only justifiable operation for stone in the female bladder." He performed this operation first 1850. It has since been repeatedly performed in America by Dr. Emmett, of the Women's Hospital of New York, and by Dr. Bennett, of Connecticut. The simplicity, safety, and unfailing success of the operation are spoken of in warm terms.

The application of this to the parallel method of *recto-vesical lithotomy in the male*, is a subject worthy of careful consideration. Recto-vesical lithotomy *in the adult* is a proceeding which was used long before the introduction of metallic sutures, and was followed with modifications by Mr. Lloyd, of St. Bartholomew's. Without these sutures it was liable to a serious objection—the occasional persistence of recto-vesical fistula. The silver-wire sutures, however, promise to obviate this inconvenience, Dr. Sims has mentioned to me a case in which Dr. Bauer, of New York, operated by this plan in 1859, Dr. Sims putting in the sutures. He says:—"The patient was placed on the left side, and my speculum was introduced into the rectum, exposing the anterior wall of the rectum, just as it would the vagina in the female. A sound was passed into the bladder. The Doctor entered the blade of a bistoury in the triangular space bounded by the prostrate, the vesiculæ seminales, and the peritoneal reduplication. He passed the finger through this opening, felt the stone, and removed it with the forceps without the least trouble. The operation was done as quickly and as easily as it would have been in a female through the vaginal septum. After the removal of the stone, Dr. Bauer kindly asked me to close the wound with silver sutures, which I did, introducing some five or six wires with the same facility as in the vagina. There was no leakage of urine. The patient recovered without the least trouble of any sort. The wires were removed on the eighth day, and on the ninth day the patient rode in a carriage with Dr. Bauer a distance of four or five miles, to call on and report himself to our distinguished countryman, Dr. Mott. The facility and safety of executing recto-vesical lithotomy (except in children for anatomical reasons), and the success of closing at once the cut by the introduction of metallic sutures, ought to make this the operation in the male."—*London Lancet.*

Mortality of Liverpool.—The annual report of the medical officers of this borough states that during the last year the deaths registered in the borough amounted to 15,266—a number greater than in any year since 1849, and 524 above the corrected average of the last decenniad.

British Surgery in Paris.—At a late meeting of the Surgical Society of Paris, three well-known surgeons belonging to this country were unanimously elected foreign associates, viz: Mr. Robert Adams, of Dublin, Mr. Joseph Hodgson, and Mr. James Paget, both of London.—*London Lancet.*

Book Notices.

THE MEDICAL FORMULARY: Being a Collection of Prescriptions derived from the Writings and Practice of many of the most Eminent Physicians in America and Europe. Together with the usual Dietic preparations and Antidotes for Poisons. To which is added an Appendix on the Endermic use of Medicines, and on the use of Ether and Chloroform. The whole accompanied with a few brief Pharmaceutical and Medical Observations. By BENJAMIN ELLIS, M.D., late Professor of Materia Medica and Pharmacy in the Philadelphia College of Pharmacy. Eleventh Edition, Carefully Revised and much Extended, by ROBERT P. THOMAS, M.D., Professor of Materia Medica in the Philadelphia College of Pharmacy. Philadelphia: BLANCHARD & LEA. 1864.

This is a neatly published volume of 341 pages, the contents of which are fully indicated by the above lengthy title. The work has long been before the profession, and its merits are well known. The present edition contains many valuable additions, and will be found to be an exceedingly convenient and useful volume for reference by the medical practitioner.

For sale by W. B. KEEN, 148 Lake street, Chicago.

ON ASTHMA: ITS PATHOLOGY AND TREATMENT. By HENRY HYDE SALTER, M.D., F.R.S., Fellow of the Royal College of Physicians; Assistant Physician to the Charing Cross Hospital; Lecturer on Physiology and Pathology at the Charing Cross Hospital Medical School. Philadelphia: BLANCHARD & LEA. 1864.

This is an octavo volume of 260 pages, neatly bound in cloth. The author discusses the nature and treatment of Asthma in a very thorough and interesting manner. His views regarding the pathology of the disease may be inferred from the following propositions:—

"1. That asthma is essentially, and, with perhaps the exception of a single class of cases, exclusively a nervous disease: that the nervous system is the seat of the essential pathological condition.

"2. That the phenomena of asthma—the distressing sensation and the demand for extraordinary respiratory efforts—immediately depend upon a spastic contraction of the fibre-cells of organic or unstriped muscle, which minute anatomy has demonstrated to exist in the bronchial tubes.

"3. That these phenomena are those of excito-motory or reflex action.

"4. That the extent to which the nervous system is involved differs very much in different cases, being in some cases restricted to the nervous system of the air-passages themselves.

"5. That in a large number of cases the pneumogastric nerve, both in its gastric and pulmonary portions, is the seat of the disease.

"6. That there is a large class of cases in which the nervous circuit between the source of irritation and the seat of the resulting mascular phenomena involves other portions of the nervous system besides the pneumogastric.

"7. That there are other cases in which the source of irritation, giving rise to the asthmatic paroxysm, appears to be central—in the brain; consequently, in which the action, though excito-motory, is not reflex.

"8. That there is yet a class of cases in which the exciting cause of the paroxysms appears to be essentially humoral."

These propositions are thoroughly discussed and sustained by an interesting variety of facts and cases. But we have neither time nor space to give even an outline of the treatise before us. It is one of the books that will repay the practitioner for a careful perusal.

For sale by W. B. KEEN & Co., Lake street, Chicago.

A TREATISE ON PRACTICAL PHARMACY. Designed as a Text-Book for the Student, and as a Guide for the Physician and Pharmaceutist. Containing the Official and many Unofficial Formulas, and numerous examples of Extemporaneous Prescriptions. By EDWARD PARRISH, Graduate in Pharmacy; Member of the Philadelphia College of Pharmacy; of the Academy of Natural Sciences of Philadelphia; and of the American Pharmaceutical Association; Principal of the School of Practical Pharmacy of Philadelphia. Third Edition. Thoroughly Revised and Improved, with Important Additions. With Two Hundred and Thirty-eight Illustrations. Philadelphia: BLANCHARD & LEA. 1864.

This is a large-sized octavo volume of 850 pages. The former editions have been sufficiently long before the medical public to render the merits of the work well known. It is certainly one of the most complete and valuable works on practical pharmacy to which the student, the practitioner, or the apothecary can have access.

For sale by W. B. KEEN & Co., Lake street, Chicago.

Braithwaite's Retrospect of Practical Medicine and Surgery—For the Half-Year Ending January, 1864. Uniform American Edition. Published by W. A. Townsend, 39 Walker street, New York.

The great convenience and value of this semi-annual summary of medical literature is too well known to the profession to require any comments from us.

Price $2 per annum in advance.

To Know: Its Source, its Mode, and its Power. An Introductory Address, Delivered at the St. Louis Medical College, November 2d, 1863. By Frank. W. White, A.M., M.D., Professor of Materia Medica and Therapeutics.

This is a well-written address, earnest and elevated in its tone, and admirably calculated to excite activity and a proper emulation in those to whom it was addressed.

Editorial.

Illinois State Medical Society.—The next regular Annual Meeting of this Society will be held in this city (Chicago) on the first Tuesday in May next, commencing at 10 o'clock A.M. The Committee of Arrangements are making all necessary local preparations for the accommodation of the Society. We can assure the Profession, in every part of the State, that all who may come to the meeting will be cordially received. Each local society is entitled to one delegate for every ten members, and an additional delegate for a fraction of more than half of ten. Every regularly organized medical college is entitled to two delegates; and each hospital for the treatment of the sick, to one delegate. Besides delegates, the constitution provides for the election at each Annual Meeting of permanent members, and of members by invitation.

Hence, we hope all who feel an interest in the advancement of the profession will attend the coming meeting. In addition to reports and papers from Standing and Special Committees, on a variety of important subjects, there are several questions

of great interest that might be properly and profitably considered by the Society. The practicability and desirableness of establishing a single Board of Examiners in each State, for the examination of all candidates for admission into the profession, is a proposition again undergoing discussion in the New York State Medical Society and elsewhere. And it is quite probable that it will be brought prominently before the next meeting of the American Medical Association, where the delegates from our own State Society may be called upon to record their votes concerning it. Is the present mode of recommending the use of alcoholic beverages in medical practice, as guarded and free from injurious consequences as it should be? This is another question of great practical importance, and worthy of more serious consideration than it has yet received.

We anticipate a full and interesting meeting of the Society.

Chicago Medical College—Medical Department Lind University.—The Fifth Annual Commencement of this institution was held in the Hall of the College, on the 1st instant. The Hall was well filled with an attentive and appreciative audience. The degree of Doctor of Medicine was conferred on seventeen candidates, who, with their diplomas, received from the President of the Faculty, Prof. H. A. Johnson, a short but eloquent and impressive charge concerning the privileges and responsibilities of their new position. Prof. H. Wing then delivered a highly interesting and instructive Valedictory Address, which will be published in full in the next number of the Examiner. At the close of the address, it was announced that the regular summer course of instruction would commence on the second Monday in March, and continue until the first Monday in July. The audience was then dismissed, and the students, graduates, and Faculty, with the invited guests, repaired to the residence of Prof. H. A. Johnson, where they found an elegant entertainment, and enjoyed a most pleasing social interview until a late hour of the night. The college term, thus pleasantly closed, had been a highly prosperous and satisfactory one. The whole number of matriculants was eighty-nine, and the number of graduates seventeen.

The attendance in all the departments, Junior, Senior, and Clinical, had been uniform and punctual to the last day of the session. The possession of good and permanent college building and grounds; the long period of Annual Lectures; the addition of the Summer Recitation and Clinical Course; the proper arrangement of courses in a progressive instead of a repetitional order; and the complete identification of hospital clinical instruction as a necessary part of both the winter and summer terms, makes this institution the most complete and comprehensive medical school in this country.

CHICAGO, March 1, 1864.

DR. DAVIS, EDITOR EXAMINER:—*Dear Sir:*—Dr. A. M. JOHNSON, of Peoria, recently stated to me a number of facts going to show that the bark of the common sugar maple is highly efficacious in the treatment of intermittents. I state none of the facts, because it is the object of this communication merely to throw out the suggestion, to be tested by those who have opportunity and inclination.

I am not unaware of the many sources of fallacy in a point like this, but I have great respect for Dr. JOHNSON'S opinion, and he was very sanguine that the most decided results would be obtained by a trial of the article.

The directions for use are the old popular formula:—Take a pugillum of the bark, steep it in a pint of water, and drink freely of the infusion.

Yours, &c., H. WING.

AMERICAN MEDICAL ASSOCIATION.—The Fifteenth Annual Meeting of the "American Medical Association" will be held in the city of New York, commencing Tuesday, June 7th, 1864, at 10 o'clock A.M. Proprietors of medical journals throughout the United States and their Territories are respectfully requested to insert the above notice in their issues.

H. A. JOHNSON, }
GUIDO FURMAN, } *Secretaries.*

We take pleasure in calling attention to the above notice of the next Annual Meeting of the American Medical Association.

The Meeting will, undoubtedly, be one of the largest and most important that has been held since the formation of the Association. We think the committees, appointed at the last meeting, will, in most instances, be prepared to report; and consequently there will be an unusual number of valuable papers for consideration. It is highly probable, also, that some of the important questions connected with medical education, will be presented in a manner to command more definite and practical action than heretofore. Let the profession of the North-west see to it, that they are well represented.

Every city, county, district, and State Society is entitled to one delegate for every ten of its members; each medical college, and hospital containing one hundred beds for the sick, to two delegates; and all hospitals with less than one hundred beds, to one delegate. We earnestly urge all the societies, colleges, and hospitals, whether civil or military, to select such delegates as will attend the meeting, and send as early as possible a list of their names, either to the local secretary, GUIDO FURMAN, M.D., New York, or to the chairman of the committee of arrangements.

LETTER FROM DR. W. N. COTE.

PARIS, Feb. 4, 1864.

CHEAP FOOD IN PARIS.

The Philanthropic Society of Paris has published its report for 1862. From the ten cheap food kitchens established in different parts of the capital, it distributed 290,016 portions of food, the produce of which was 11,709 francs, and the expenses 22,522 francs. In the six dispensaries, 1,775 patients received medical assistance, whilst 1,659 gratuitous consultations were given. Out of that number of sick, 81 died, being a smaller proportion than takes place in the hospitals. The expenses of those dispensaries for 1862, amounted to 41,985 francs, including medicines and bath, or an average of about 24 francs per patient. The budget of the Society for 1862, is stated as follows:—The balance in hand was 35,508 francs, and the receipts 66,665 francs, making a total of 102,173 francs. The general expenses amounted to 77,856 francs, showing a surplus of receipts of 24,317 francs. As you are no doubt aware, five francs equal a dollar.

TREATMENT OF BRONCHOCELE.

Bronchocele, or goitre—a disease which is marked by a tumor on the forepart of the neck, seated between the trachea and skin, and usually occupying the thyroid gland—is very often met with, and, on account of the inconvenience it generally causes, has been a subject of much attention on the part of surgeons. Various methods of treatment have been instituted against this common disorder. Some surgeons have resorted to extirpation, an operation first recommended by Celcus, and which has sometimes proved successful. But it is quite unsafe to attempt its removal with the knife, on account of the enlarged state of its arteries and its vicinity. Palfin, in his Anatomie Chirurgicale; Dr. Bell, in his Surgical Works; Desault, Bonetus, Severinus, and Dupuytren, testify to the danger of this operation, and many patients have died in the hands of the most expert and enterprising surgeons. Cases are recorded, however, where operations of the kind have been attended with success, but it must be confessed, they are extremely rare, and extirpation should be resorted to only when bronchocele has become so large as to endanger suffocation.

Dr. Blizzard, of London, recommends the tying up of the great arteries in the vicinity of the tumor, from which it chiefly derives support. This operation is preferable to excision of the thyroid gland, inasmuch as it presents comparatively but little danger. Internally, a remedy which has proved very efficacious in this disease is burnt sponge, administered usually in the form of lozenges, which consist of cinnamon, gum arabic, syrup, and calcined sponge. It may be given in the form of powder, mixed with honey and other materials, or the simple decoction of the sponge, as recommended by Herrenschward, of Berne, in Switzerland. Many persons laboring under bronchocele, have been cured by this remedy, some of whom began to suffer much, and to be seriously alarmed on account of the difficulty of respiration and deglutition with which their complaint was attended. Sulphate of potash, continued for several weeks in large doses, is said to have effected many cures, in the hands of Fodere and other practitioners. It should be given dissolved in water, in the proportion of thirty grains to a quart daily. Besides burnt sponge and sulphate of potash, mercury, pumice stone, muriate of barytes, egg-shells, muriate of lime, digitalis, muriate of iron, belladonna, electricity, pressure, frictions, issues, setons, blisters, and caustic, have been employed against bronchocele. With what success does not appear. I now see by the *Journal de Societie de Medicine de Rouen*, that *iodine* is

highly recommended as a remedy for goitre. It is employed according to the following formula:—

Take pure glycerine,	1000 grammes=2 lbs.
Common dry soap (pulverized)	50 grammes=1½ oz.
Dry powder of Iodate of Potassium,	130 grammes= 4 oz.
Essence of sweet almonds,	2 grammes=40 gr.

To be rubbed over the tumor as often as necessary. At the same time the patient should take internally, solution of the tincture of iodine, made of four grammes of iodate of potassium, dissolved in thirty of the tincture. Three, four, or five drops may be given at every meal. At night, before going to bed, a pinch of the powder of calcined sponge may be administered, good diet, dry habitation, exposure to the sun, sea baths. Such is the treatment usually followed in the Department of the Seine Inférieure. Iodine was first introduced into practice by Dr. Coindet, of Geneva, who employed it with success as a remedy for bronchocele.

ACADEMY OF SCIENCES—PRIZES.

The Academy of Sciences lately held its annual session at the Institute, Dr. Velpea presiding. The prize for *Experimental Physiology* was given to Dr. Moreno. For *Medicine and Surgery*, the Academy awarded to Dr. Chassaignac a prize of 2,500 francs, and to Drs. Bourdon, Cahen, Debont, and Gallois, an honorable mention, with 1,500 francs for each. For *Insalubrious Arts* a prize of 2,500 francs was given to M. Grimaux de Caux, for his work "On the Supply of Water to Towns and Rural Habitations." A prize of 2,500 francs to M. Guignet, for the preparation of non-injurious green for printing on tissues; and a recompense of 1,500 francs to M. Bouffe, for having discovered a substitute for arsenical green in the manufacture of artificial flowers.

The following are the prizes on medical subjects proposed for this year and the ensuing ones by the Academy, the papers in all cases to be sent in headed with some motto, to be repeated on a sealed envelope containing the name of the author. 5,000 fr. "To give a complete History of Pellagra," (March 31st, 1864.) 5,000 fr. "On the Application of Electricity to Therapeutics, (March 31st, 1865). 20,000 fr., the Academy and Emperor's prize, "For Method of Preserving Members by Preserving the Periostem," (March 31st, 1866). Lastly, the Breant prize of 100,000 fr. for the discovery of an unquestionable specific against cholera, or, in default of this, a prize of 4,000 fr.

to the competitor who can prove that there exist in the air substances which may materially contribute to the propagation of epidemical diseases.

SENILE CATARACT.

At the Medico-Surgical Congress of Rouen, Dr. Wecker read a paper on *The Surest Method of Removing Senile Cataract.* You are aware that there are two or three different operations now in use—*couching* or *depression* of the cataract, an operation practised, it is thought, long before the time of Celcus, and which consists in lacerating freely, but cautiously, with the point of a needle, the anterior capsule of the lens, and then pressing the lens itself downward and backward, and lodging it in the vitreous humor. Another method is that denominated by Sir William Adams, as the *absorbent practice*, and said to have originated with Mr. Pott. The aqueous humor having been found to have a solvent power, advantage is taken of this circumstance, by pushing fragments of the lens which happen to be detached during the operation of couching into the anterior chamber. Two operations are in use, each founded on the absorbent principle—the *anterior* and *posterior*—the former being performed by penetrating the cornea at its lower and outer part about a line anterior to its union with the sclerotic coat, whilst in the posterior operation the opening is made in the schlerotic coat instead of the cornea. There remains another operation which is often resorted to—*extraction* of the cataract, which is performed by a knife instead of a needle. The knife is introduced above the equator of the cornea, and about a quarter of a line anterior to its junction with the sclerotica, with the edge downward, passing it slowly and steadily along through the anterior chamber until its point emerges at the inner edge of the cornea. The section of the cornea being made, the aqueous humor is discharged, and the anterior capsule of the lens is then cautiously lacerated precisely in its centre, and brought out through the opening made in the cornea. As soon as the lens is removed, the flap of the cornea is adjusted, the lids closed, and a bandage applied lightly over both eyes. Hitherto surgeons have been exceedingly cautious against wounding the iris, and in order to guard against this, Baron Wenzel has recommended friction of the cornea with the end of the finger during the passage of the knife, an expedient which causes the iris to retire immediately from the edge of the knife, and remain so long as the friction is continued.

Dr. Wecker recommends the following method of extraction,

which consists in making the section of the cornea near the conjunctival angle so as to include the most vascular portions of that membrane, and their excising with curved scissors from three to four millimetres of the iris. This is what Dr. Wecker calls modified method of extraction. Iridectomy may be practiced some time before extraction, so that the wound of the iris be wholly cicatrized when the moment comes for operating on the cataract. W. N. COTE.

—*Medical and Surgical Reporter.*

FORMULA FOR A SOLUTION OF BROMINE.

By Dr. J. Lawrence Smith, Professor of Chemistry in the Medical Department of the University of Louisville.

The frequent demand for bromine from the Louisville Chemical Works, which are under my direction, induced me to inquire for what purpose it was used, and I learned that it was being employed as a therapeutic agent, especially in the form of vapor mixed with air as a purifier of the atmosphere of hospitals, where erysipelas, gangrene, small-pox, &c., existed, and also internally in certain affections of the throat. Knowing full well the inconvenience of the use of the substance in the form called for, I at once undertook to compound a solution which would meet the ends required, and be more convenient for any therapeutical use to which uncombined bromine might be applied. From the slight solubility of bromine, any attempts to dissolve it in water would give too dilute and bulky a solution, the natural suggestion, therefore, was to use but little water and facilitate its solubility by adding bromide of potassium; at first the following proportions were used:—1 troy ounce of bromine, 120 grains bromide of potassium, and 1 fluid-ounce of distilled water; the formula left a small quantity of bromine undissolved, and the solution was too concentrated. After varying the proportions in different ways, I have settled on the following as the most convenient formula:—

℞.—Bromine, 1 troy ounce; bromide of potassium, 160 grains; distilled water, q. s. to make four fluid-ounces of the whole mixture.

Dissolve the bromide of potassium in about two fluid-ounces of water in an eight ounce bottle, then add the bromine, agitate gently until the solution is complte, then add water enough to bring the whole to four fluid-ounces.

This mixture forms a very dark red solution, evolving strong

fumes of bromine, and readily soluble in any additional quantity of water.

I have given this formula as one that will doubtless recommend itself to those of the medical profession engaged in using bromine, and it is already being used by the medical profession of this place.—*American Journal of Medical Science, April*, 1863, *p.* 385.

ON THE USE OF COLLODION WITH GLYCERINE IN ERYSIPELAS.

The substitution of a glycerinated collodion for the common collodion will completely prevent the cracking of the skin and other unpleasant consequences which often occur when the latter is used as a dressing in erysipelas of the face.

The manner in which it should be prepared, according to Dr. W. Abbotts Smith's recent small work "On Glycerine, and its Uses in Medicine, Surgery, and Pharmacy," p. 30, is by adding two parts of glycerine to one hundred parts of common collodion. The addition of this small proportion of glycerine is sufficient to impart considerable suppleness to the collodion, and to prevent its dragging upon and cracking the delicate tissues to which it is applied.

[Equal parts of collodion and castor oil are recommended by another writer.]—*Lancet, October* 31, 1863, *p.* 527.

Professional Dignity in France.—Our readers have not forgotten how certain parties have of late been summarily dealt with by the Medical Council and the College of Surgeons for unworthy conduct. A measure of the same kind has lately been adopted by the Academy of Medicine of Paris respecting a medical man named Priou, practicing at Nantes. This individual was a Corresponent of the Academy, and had lately, at the Medical Congress of Rouen, bills posted all over the town with advertisements of the most reprehensible kind. The members of the Congress protested very energetically, and the Academy has at last taken up the matter. It has been decided that Priou, for this forgetfulness of professional dignity, should be erased from the list of correspondents.

Perseverence.—The chair of Surgery of the Faculty of Turin was lately competed for by Messrs. Pacchiotti and Bottini. The former beat his adversary and obtained the professorship, for which he had competed *five times* previously.

CHICAGO MEDICAL COLLEGE.

Medical Department of Lind University.

The regular Annual Lecture Term in this Institution will commence on the second Monday in October, and continue until the first Tuesday in March following. Clinical Lectures *daily* throughout the term.

FACULTY.

J. S. JEWELL, M.D., Professor of Descriptive Anatomy.
H. A. JOHNSON, M.D., Professor of Physiology and Histology.
J. H. HOLLISTER, M.D., Professor of Materia Medica and Therapeutics.
HENRY WING, M.D., Professor of General Pathology and Public Hygiene.
F. MAHLA, Ph. D., Professor of Inorganic Chemistry.
EDMUND ANDREWS, M.D., Professor of Principles and Practice of Surgery, and of Military Surgery.
RALPH N. ISHAM, M.D., Professor of Surgical Anatomy and Operations of Surgery.
W. H. BYFORD, M.D., Professor of Obstetrics and Diseases of Women and Children.
N. S. DAVIS, M.D., Professor of Principles and Practice of Medicine, and of Clinical Medicine.
F. MAHLA, Ph. D., Professor of Organic Chemistry and Toxicology.
H. G. SPAFFORD, Professor of Medical Jurisprudence.
J. S. JEWELL, M.D., Demonstrator of Anatomy.

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The Summer Reading and Clinical Term commences on the second Tuesday in March, and continues until the first Tuesday in July; and is free to all matriculated students of the College. Boarding can be had for $2.50 to $3.50 per week. For further information, inquire of

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THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., EDITOR.

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Original Contributions.

ARTICLE XIII.

VALEDICTORY ADDRESS TO THE GRADUATING CLASS IN CHICAGO MEDICAL COLLEGE, MEDICAL DEPARTMENT LIND UNIVERSITY,

At the Fifth Annual Commencement, March 3, 1864.

BY HENRY WING, M.D., Prof. of General Pathology and Public Hygiene.

GENTLEMEN OF THE GRADUATING CLASS:—

It has been truly said, that there is but one journey through life, and no going back to correct mistakes.

One of the most impressive passages in all profane literature is repeated day by day in our schools, and no one thinks of its meaning. It is in these words: "I might have been, thou mightst have been, he might have been."

In the lips of those who utter the words there, they have no meaning, because all their possibilities are in the future. But the words in their significant use imply a possibility or a power which once existed and now exists no more—capacities, that for those who speak, will, like the raven in the immortal poem, live only in the undying echoes of "nevermore."

Such is the nature of life. Each opportunity comes but once. To the young all paths are open. To the aged the way is fenced up and hedged in, by habit, by talents developed, and talents

wanting, and to a certain extent, man has become the prisoner of his own faculties, so that new ways, and new thoughts, and new activities are difficult, and even impossible to him.

And, as it is true that as a man thinketh so is he, so as a man *does*, so will he think; that is, habitual occupation molds the character.

In life these influences are gradual and stealthy. So it is that by degrees a profession wears into a man, and what once would have seemed to him a quaint, odd picture, is his own likeness. If the picture were presented to him before he had grown into it, perhaps he would regard it with great repugnance, and he would say with BENEDICT in the play:—

"Can *I* be so converted, and see with these eyes?"

Such being the influence of life, it is well that in the course of it there are, as it were, landing-places to the stairs, where we are invited to pause and look around—to digest what has gone before, and survey the different prospects which different courses offer in the future.

Such a point, gentlemen, is this in your history. After long and laborious study, you have received the approbation of those who have been authorized by the high authority of your State, to give it, to your entering an honorable profession, which it is presumed you will pursue for life.

But as yet you have not entered upon your professional course. Life is all before you, and you are free. Notwithstanding the time you have spent in the preparation, you are under no compulsion to go forward. All that time has been employed in acquiring a knowledge of man and of his relations to things around him.

Multitudes of thinkers have approved the declaration that

"The proper study of mankind is man."

Whether we accept the statement or not, there can be no harm in spending a portion of our early years in that study, whatever may be our future employment.

Let us, then, in a spirit of candor, examine the Profession of Medicine, remembering that, if we make a mistake, there is no going back, after we arrive at the end, to correct it.

First, we look at it as a means of Intellectual Culture.

Different studies have their advocates as a means of cultivating the powers of the mind. And we know that some studies tend to develop the mind unequally, if too exclusively pursued. A man may study mathematics exclusively until his mind runs by strong habit, in the channel of numbers and quantity, and his apprehension of other subjects is enfeebled.

Again, some studies, exclusively pursued, diminish one's *relish* for other subjects. Some men become so devoted to collecting specimens of some single department of natural history, that they take little interest in the great living and moving world. Some such would rather see a specimen of a new beetle, than Lake George or Mount Washington. To them, the question of rank betweea a lobster and a crab is a matter of very grave importance, while they do not care whether HALLECK outranks GRANT, or GRANT HALLECK.

Such men have their uses, of course. We may well thank them for their labors, but we can hardly regard them as symmetrical characters, or their experience as one to be chosen as the most desirable.

I need not tell you that the pursuit of Medicine is no such exclusive subject. There was a time, perhaps, when you shared the impression of many others, that it was peculiar and limited, that a Doctor's brain was something like an old garret, stored with things out of the way of common affairs. That he mused upon pains and aches, pills and powders, and disgusting draughts.

But your first introduction to the subject showed you that it was to be approached through sciences commonly regarded as altogether foreign to man.

You have seen how the elements of man's nature and the laws of their action, must be sought for outside of his body, in other objects and structures. To be understood they must be taken in their simplest forms. And the study of those simple forms leads you to the study of all inorganic substances and forces, and of all vegetable and animal life. The water of the ocean, the oxygen which forms so large a part of the mountain, must have no law of action which is unknown to you. In the whole

range of vegetable and animal life, there must be no organization—no function, the law of which you do not understand, in at least some of its uses. In the simplest organizations you learn the alphabet of the science of man, and step by step advance to the higher, until you reach the most complex and mysterious organization, which, in some degree, represents all the rest.

If not directly a student of all the physical and natural sciences, you are at least made acquainted with their results; and habit and association invite you to the investigation of that "high history" of man which involves the geological development of his place of abode, and all the elements and forms which coëxist with him. The study of disease is but a more extended and critical study of the conditions of life.

Neither is this quite all. You are concerned with man's social relations, employments, and pleasures, and faith for all these bear largely upon that health which is your especial concern. To some degree, then, you are students of institutions, of customs, and of the passions of men.

We have, then, a study of the most liberal character—wide as the world itself—deep as human life—related to, if it does not include, all the creations of God.

If you pursue this great subject in the right spirit, you will tread reverently along the path where the Creator has gone in His work, leaving behind him the record of His thought, and your whole professional study will be a walk in His temple.

There is, however, some apprehension growing out of the very breadth of the subject. There are some men who despair of keeping up with the profession, amid the multiplied cares of life, and conclude that as they have done well they can continue to do so on what knowledge they have. I warn you that if you ever indulge such a thought, it will be fatal to your intellectual culture; and it would be far better to be a shoemaker, devoting your sedentary hours to reflection, than practicing an art which you are conscious you do not fully understand; for all who do not go forward must go backward.

But the Practice of Medicine (somewhat like Morals) is dif-

ferent from the study. The influence upon character comes quite as much, perhaps, from that source.

It is at once apparent that the life of the Physician is not altogether natural; that is, a good part of it is among scenes not altogether like life in general. He is so much amidst pain, and suffering, and bereavement, that it might be supposed that he would ultimately lose some of the finer sensibilities of his nature.

When a great epidemic forces men to live in the atmosphere of suffering and sorrow, multitudes shield themselves from the unwelcome experience, by refusing to feel anything of what they see. And the capacity of indifference is cultivated so rapidly that it startles us in the contemplation, and almost makes us doubt whether man be not really something worse than a beast.

There are some, perhaps, upon whom the experience of the profession has a similar influence. Men who began their professional life with no proper conception of its obligations, and adopting the sentiment,

"The world is mine oyster."

Such a man bends over a tumor with a keen, practiced eye, and hard, coppery face, to see how much money there is in it. Or how much renown, to yield money at last, might be made by excising it, and publishing an account of the successful operation, omitting to state that the patient died of the effects of the operation.

Such a man, if he cultivates science as he generally does, pursues it for ulterior ends, and without pleasure in the subject itself. In the fields he is no guest of Nature, but a

———"Fingering slave,
One who would peep and botanize
Upon his mother's grave."

Surgeons are more exposed to become indifferent to the feelings of their patients, because they have but little acquaintance with them, and if they have a large practice, they are almost compelled to look upon them as subjects for operations merely.

The cause most likely to lead the physician in that direction is neglect of study. The physician who neglects study, neces-

sarily becomes empirical and dogmatical. He does not preserve clear ideas of the causes of the phenomena with which he deals. Thus he comes to look upon pain and suffering as a blind fatality, and shuts his ears to its cry with a half recognized but smothered consciousness of deficiency, which is not far removed from guilt. But the physician who keeps pace with the progress of his profession, knows that he labors daily to understand more fully the laws of that suffering which he is unable to relieve. And in the study even of cancer, and those diseases which are the most fearful to contemplate, our labor is rewarded by the acquisition of increased ability to palliate what we cannot cure. Moreover, even in such diseases, we find some play of beneficent laws, a seeming effort of nature to do that which is best, and we feel that even there, there "is a spirit of good in things evil," which exhorts to kind feeling and beneficent action.

But there is a counterpart even to this view—a bright side to the dark picture. It may fairly be assumed that some, at least, of our cases, would not be fatal. If a physician is truly skilful, it is his constant privilege to give relief to suffering, and not infrequently to prolong lives of inestimable value. We do not desire here to magnify our powers. We owe it to you on this occasion to be candid. We know that there are manifold difficulties, many uncertainties, and painful limitations to our knowledge. And yet it is true that the power which the skilful physician holds in his hand is, in many cases, very great indeed. Well may he rejoice in it as more wonderful and more to be coveted than the fabled lamp of Aladdin. The physician who does not feel a high enthusiasm over the power of his art, and feel profoundly grateful for it, does not know its resources, and is unworthy to pursue it.*

If, then, the Physician is true to his calling, he not only sees more suffering than other men, but he does more than any other

*[The profession has been depreciated because of the diversity of counsel given to Theodore Parker for an incurable malady. Farmers differ as much as to what grain to sow, what manure to use, and how to cultivate, but the grain houses of Chicago testify that they do raise corn with some success.]

to relieve it, and his sympathies grow in the exercise, and in proportion as they grow, yield the more pleasure in their gratification.

But if the associations of the physician are peculiar in the respect that we have just considered, in others, they are the most catholic of all vocations. No rank, no sect, no party, is excluded from his acquaintance. There can scarcely be anything in life, or in human experience, that he does not know. His knowledge and culture make him the companion of the best and wisest men, and his duties make him acquainted with the worst and lowest. Characters that other people only read about are his familiars. Mrs. PARTINGTON is his intimate acquaintance, and he knows that the old lady has many excellent qualities besides her amusing speeches, which are a cure for the "perplexy." He knows CÆSAR in the Senate Chamber, as other men do, and he sees him in the fever when he cries for drink "like a sick girl." As much as possible, he sees the inner life of men when pain has torn off all disguise. Crime that hides itself from society, is open to him; and sorrow that is not spoken to the husband or wife, asks his counsel. He enters the house, not as a heartless critic, or vapid gossip, but as something more than a friend—almost as one of the household.

Woe to the man who abuses such opportunities, and judges severely even in his own mind, though he never speaks it, the life that is thus exhibited to him.

The discipline of the Profession includes some trials in regard to money. It is possible that some other men know something of this subject also, but probably the experience of the physician has its peculiar features. The first trial is before he has made a reputation, and when he has, perhaps, difficulty in sustaining himself while he waits for the slow growth of confidence. He is tempted then to resort to some quackish means of attracting public attention, or to make unwarrantable pretences and promises to his patients. If he yields a little, he receives a stain upon his integrity, and it will require years of struggle to restore his balance of character, and secure his own self-respect. If he goes farther, and becomes a pretender, we will not stop to discuss what becomes of a lost man.

The second trial on the subject of money is perhaps in middle life, when the physician finds that other men, with far less labor and care, and not half the skill, grow rich, while he has only a respectable competency. I give you fair warning that in the practice of medicine, though you have a right to expect to have all that is necessary for the best culture, you probably will never grow rich enough to be shut out, for that reason, from the kingdom of heaven. You may have a neighbor, perhaps, with ten times your income, and made by far less labor. His house will be high and many-chambered, while yours is only neat and comfortable; large mirrors reduplicate the splendors of his parlors—his walls are hung with pictures which he estimates by the thousands which they cost, while yours are sparsely ornamented with a few gems of art. His face is plump with the juices of all good living, while yours is gently furrowed with care.

Do you sigh for JENKINS' income, his fine house, his pictures, his carriage? If so, the same door is open to you. Make money your study, and you can get it. Perhaps you may secure enough to absorb all your attention; and your children will probably think that fine clothes are more than character, gilded frames more than beauty, and houses more than life.

I know that there are some who think that the profession can be made the means of procuring riches, and some of you have heard the advice from high professional authority, that medical services should be rendered solely for the sake of money in every case, and always with the expectation of accumulating a fortune—that beginners in the profession should claim a recognition of their value to society by refusing to exercise their vocation in any case without pay, and regard large fees as the measure of value of their services. We cannot so advise you; nor can we recognize such a standard for our profession. The pretender, the man who has chosen a short road to an unmerited position among men of science, who devotes but little thought to his profession, depreciates his instructors if he discovers the estimate which he himself entertains of his labors; but as such men are really unworthy to be employed at all, their charges

are all unjust, and they not unfrequently are the most exorbitant. The services of the true physician, on the other hand, are, often times, above all price. He is not merely the hired servant of his employer. He is his friend in the best sense of the word.

By many, such a view is regarded as fanciful altogether.

The subject is sufficiently important to justify us in examining it.

We do not propose that a doctor shall dine upon gratitude instead of sirloin, nor drink compliments for tea. He should be supported liberally by those who look to him for counsel in matters of health and life; but to place a pecuniary estimate upon *every* professional service is impracticable in itself, and the young man who takes such a rule for his conduct, insisting upon it in every case, will be slow to acquire the skill of an experienced physician; he will not secure the coveted wealth unless he gets it outside of the profession, and he will live in a state of chronic dissatisfaction with the public and his work.

We put it to an objector: Suppose that sickness of an alarming character invades your family circle. Some one that is near to you is in danger, and the shadow of death is in the house. The Physician comes. He studies the intricate problem of the disorder. A very little thing will turn the scale one way or the other. An omission to note the most minute feature of the case will cause a failure in the treatment. Is it enough that the physician looks at the case with a speculating eye? Would you not prefer, by far more than words can measure, that he should feel something of your solicitude to prompt him to the most careful scrutiny and consideration?

Again. Suppose that he does make the case in some degree his own. He studies the case with that deep insight which solicitude only can give—he forgets himself—forgets his sleep—he sees each new danger before it falls, and wards it off, until at last the dreaded blow which threatened to fall upon the house is averted, and health returns again. Can you write down in your ledger just how much money such a service is worth?

If you say that a proper gratitude would in such a case seek

some material expression, more than a customary fee, it is true, but such an acknowledgment is an expression of gratitude and not of debt: it is measured by the means of the giver, and not by the price of the service.

Do we in this propose a rule of conduct that is new and unrecognized by other classes of men?

How is it with the citizen who serves his country in the temporary character of a soldier? When the walled fortress frowns with cannon, and bristles with bayonets, and glares with flashes of destruction, what money would tempt men to cross the treacherous ditch, scale the high wall, breast the hard point of the bayonet, and fall upon the determined foe? And yet, thanks to our noble citizenship, when our country asks for such service, men enough for the work always come forward.

Shall we be behind all others in beneficence to society? Shall we alone

> ——————"Coin the heart,
> And drop the blood for drachms?"

Such has not been the practice. But it has often been claimed that physicians, as a class, are behind no other in deeds of magnanimity and beneficence to others.

When any new and strange disease is approaching from abroad, spreading dismay and death wherever it goes, medical men go forward to meet it, and while breathing the atmosphere of death, study the nature of the disorder, and strive to gain a mastery over it.

If we voluntarily abandon that ground for another, in order to increase our gains and "respectability," what shall we say is the pecuniary value of that man's life who, for money, encounters every pestilence that comes? Or shall we take the other alternative, and rejecting the example of others who have gone forward to meet cholera and other terrible destroyers, join the pale-faced crowd that, as the epidemic comes near, betake themselves to flight?

It is better to have a just estimate of the requirements of your position, and expect to meet them cheerfully, or decline the vocation.

Thus we have presented some of the influences which tend to mold the character of the physician, and in regard to which it behooves you to be on your guard. It is a more trying experience than many others, for the moral character, because it makes large demands for magnanimity, which can hardly be denied with indifference merely, for who refuses to respond to them may fall,

——"Like Lucifer,
Never to rise again."

If you are prepared to meet all these trials, and convert them to good, and if such an employment suits your desires, take it with a just estimate of its defects as well as its excellencies.

The field of labor is one which, as nearly as it is possible, engages the faculties in such a way as to give satisfaction to the mind. It always maintains a harmonious relation between the intellect and the emotional character. Satisfactory employment, in which the whole man grows, is in itself a perennial fountain of good. The webbed foot of the bird must press the water, the wing of the eagle must cleave the air, and man is blest when his faculties are well employed. Many occupations exercise the faculties so unequally as to give a sense of weariness, as a fixed posture does to the body; and hence perhaps the majority of men pursue employments which they long to lay aside, in some happier day to come. We cannot say that the practice of medicine is an absolute guaranty against discontent, but it does furnish employment of the highest value, and to a benevolent mind of the most gratifying nature.

The knowledge of the profession is broad and liberal in the highest degree. It ought to render the mind free from those prejudices and misjudgments of men and things which so often disfigure and unbalance the character. No mode of life leaves the mind open to more of the truest pleasures that life can give. No man better than the physician enjoys the sympathy of warm and devoted friends. Few, if any, enjoy better opportunities for exerting a good influence upon others—to strengthen virtue in the hour of its weakness and trial—to brighten faith when darkened, and comfort those who suffer, it may be, without hope.

No life can give, at the close, when nothing remains but its recollections, more memories which are contemplated with satisfaction, and do *not* give a more than dramatic interest to those words, "I might have been."

Custom assigns us the duty to offer you some words of counsel as we relinquish the position of your instructors, and we avail ourselves of the privilege with pleasure, because in our past relation the zeal with which you have sought for knowledge and loved the truth has bound us together.

Take, then, our parting words as the promptings of an interest in your welfare, and a desire to smooth, if possible, your way in life.

1. Having once successfully entered upon professional life, and ascertained your fitness for it, never turn aside from it for any attraction whatever. Do not be tempted by pecuniary speculation. Neither think to divide your allegiance between your profession and some other employment.

If you divide your attention you will divide your strength, and lower your real, if not your reputed standing. In the practice of the profession, if rightly pursued, there is a constant accumulation of experience, knowledge, and judgment, which are elements of power, and render your services of more value in that department of labor than in any other.

And yet, in a country where the people are the guardians of the public welfare, the duties of the citizen are not to be neglected.

The earliest pages of our history are brightened by the example of members of our profession who have abandoned it temporarily for the service of the country. The name of RUSH is alike honored in the annals of medicine, and in the councils of the nation, at a time when the greatest names of a generation were there clustered together. First, too, among the voluntary martyrs to our national liberty, stands the name of another member of our profession, who left its duties first for those of the public councils, and then for the post of a patriot soldier. It is not our province to-night to speak the praise of JOSEPH WARREN. Neither is it necessary to cite such names, to vindi-

cate those of our profession who, in the first hour of our present national peril, grasped the sword and hastened to the tented field. These examples are mentioned merely to qualify the rule proposed, and show that when the public welfare demands, every citizen is called upon to contribute his services to his country in whatever field they may be most useful. But the physician should never seek public life for the sake of the honors connected with it, and never descend to be a mendicant for office.

2. *Secure and cherish a high reputation.* The means which will build up a sound and growing reputation are precisely those which would be dictated by a desire to honor your profession. As another motive for the same conduct, then, I offer you the additional exhortation,

3. *Love your Profession*, be jealous of its honor, and strive to increase its usefulness and influence.

For both of these objects, first of all have self-respect. Character is the power with which a man works among men to do good. The basis of character is self-respect. And the basis of professional character is a consciousness of thorough qualification. To have this, you must always be a student. Not a reader of many books. But you must carefully observe what comes under your notice, know what others think in regard to it, and have an opinion of your own. To be a student of medicine, you must also keep up a communication with the great body of the profession; attend, as far as possible, professional meetings; and strive to contribute something to the common stock of knowledge through professional publications. Every locality will furnish some facts, at least, which, if carefully noted and faithfully reported, will be valuable, and be some return for the great stock of knowledge which the profession has accumulated by ages of observation and study, and which has been free to you, as it is to all.

With the same regard to your own standing, and the honor of your profession:—

4. Avoid as far as possible all controversy with competitors. Never speak of quacks. Treat every true member of the profession as a brother.

Endeavor to make your talents as useful as possible to mankind.

Instead of resolving never to work without pay, resolve to work any how, wherever you can do good.

This is the best policy, even from the lowest stand-point. Practice gives experience, judgment, increased knowledge, and it digests what you already know, as you who have been in daily attendance at the clinic know full well. Do not consider the poor, to whom you render gratuitous services, as unworthy of consideration. Charity practice should be a school of manners as well as medicine. If you allow yourself among one class of patients to neglect any of the nicer proprieties of life, it will not fail to react upon your own character, and either detract something from the polish of a true gentleman, which is a necessary part of the qualifications of a true physician, or render the exercise of such demeanor irksome, and a matter of constant care. The best course in this matter is also the best policy. It is to have a nice regard for the feelings of every patient, and cultivate, in every professional relation, sincere kindness, geniality, and urbanity.

It only remains to say the last word, which friends are loth to speak.

We part with you, gentlemen, with more of hope than regret. Your course thus far, in regard to your profession, excites confident expectations of a noble future. While other institutions have tendered you the privileges of the profession on a briefer course of study, and without practical acquaintance with your duties at the bedside, you have magnanimously chosen to devote your time and labor to an extended and thorough course of study, combined with daily clinical experience. By this course you have shown that you preferred to be well qualified for your duties, rather than be in haste to reap their fruits. You have thus contributed in no small degree to establish a high standard for our profession. Your example will contribute to urge, and ultimately to compel, other institutions to provide equal facilities for more extended study, and to add also clinical instruction. These benefits will be extended to numberless

others hereafter. To you, then, belongs the honor to-night of having, so far as you have gone, contributed to honor your profession, as well as be honored by it. You will not fail hereafter to continue in the course you have so well begun. Your labors will be felt in the advancement of our science and the elevation of the practice of our art, by the constant infusion into it of beneficent aims. It is, then, with something of just pride, with much of the pleasure of welcome, that I say to you, in the name of my colleagues, your late teachers, Farewell.

ARTICLE XIV.

IMPROVED METHODS OF COUNTER-EXTENSION IN TREATMENT OF FRACTURES OF THE INFERIOR EXTREMITIES.

BY E. ANDREWS, M.D., Professor of Surgery in Chicago Medical College.

Dr. LATTA, of Goshen, Indiana, has devised and contributed to the Museum of Chicago Medical College a new fracture apparatus, which is deserving of favorable mention among the improvements of the day. This instrument is constructed entirely of steel and iron, and though composed of a considerable number of pieces, yet has the different parts so firmly constructed and attached together that there is little liability to loss of the pieces or derangement of action. The chief peculiarity consists in the mode of counter-extension, which is effected by using the sound thigh as the base of pressure. The extension is attached to the affected limb by adhesive straps. The extending rod is of steel, and passes between the two limbs up to near the perineum, where it bears a short cross-arm. This cross-arm carries at either end a piece of bivalve sheet iron armor to embrace each thigh. The one for the sound limb encloses it firmly, so that the taper of the thigh prevents the armor from slipping upward, and thus furnishes a secure counter-extension. The armor for the broken limb embraces it more loosely, simply keeping it in position. The lower end

of the extending bar is cut into a screw and carries a movable cross-arm, to which is attached a spring balance for showing the number of pounds of extension force applied. A hook in the cross-arm receives the ends of the adhesive straps coming from the affected limb, and the extension is made by screwing the cross-arm thus attached downward. A variety of conveniences exist in the apparatus, the details of which cannot be described in this article. The same instrument can be applied both to adults and to children, as well as to fractures on either side, or in any part of the limb, between the hip and the ankle. It is found by experience that Dr. LATTA'S invention possesses the following advantages:—

1st. The counter-extension has its bearing upon so large a surface that it is entirely painless.

2d. The attachment of the counter-extension being below the pelvis, it leaves the body free, and allows the patient to relieve tediousness of his confinement by sitting up in bed whenever he chooses.

3d. It preserves to the fullest extent the admirable benefits of adhesive strap extension.

It has the slight disadvantage of, to a certain extent, imprisoning the sound limb, and also of being some what complex in structure, though simple in action. The whole apparatus is neatly put up in a box.

In this connection I may be excused for completing the discussion by recalling other improvements which have already been noticed in the pages of the EXAMINER. Dr. DODGE, of Janesville, Wis., exhibited, at the last meeting of the American Medical Association, an apparatus for fractures of the inferior extremity, with an improved mode of making counter-extension by means of adhesive straps. This consists of a long splint, extending from below the foot to six inches above the crest of the ilium. At the upper extremity of the splint arises a semicircular steel bow, which passes over the shoulder and terminates in a hook by the side of the neck. To this are attached four long adhesive straps, each two and a-half or three inches broad, two of which extend down the back and two down

the front of the body, as far as the pelvis. Thus a secure attachment is obtained for counter-extension, which is so large as to be entirely painless. The extension is made by adhesive straps, applied in the usual manner, which pass down to the foot-board. The foot-board itself is borne by a cross-arm, and extended by a screw.

The advantages of this instrument are, its painless counter-extension, the elastic action of the steel bow, and the simplicity and lightness of the apparatus. There is a certain degree of disadvantage, however, in the fact that the counter-extension being made from above the shoulder, the whole body is drawn straight, like a string, and kept more rigidly in one posture than is quite desirable; but the cures produced by it are free from shortening.

I have referred in a former paper to the fact that some surgeons have returned to the old practice of producing counter-extension by means of the weight of the hips on the single inclined plane, and are thus enabled to dispense entirely with all special counter-extending apparatus. In constructing appliances for this purpose, I advise the following method:—Have a joiner make a simple fracture box, four feet and six inches in length, by twelve inches wide at one end, and six at the other. The wide end may be a little hollowed out to fit against the bulge of the nates. The sides should be six inches high, and extend from the small end two and a-half feet towards the opposite extremity; then insert a screw pully in the small extremity, and the instrument is finished. The fractured limb should be carefully placed in this box, on suitable cushions, and the foot end of the apparatus raised at an angle of twenty or thirty degrees. Adhesive straps should be attached to the leg in the ordinary manner, and a cord run from them over the pulley, supporting a weight of several pounds. A bag of sand is a convenient weight, but a brick will often be found just as good. Some surgeons are so in love with this mode that they do not even place any short splints upon the thigh, but rely purely upon the extension to keep the bony fragments in correct position. On the whole, there can scarcely be anything devised

better than this for plain, ordinary cases, as the counter-extension, being merely the weight of the hips, is painless, and the body of the patient is comparatively free to make all necessary motions. The box, however, is a little clumsy and unwieldy, when the surgeon wishes to take it with him from place to place.

Since the invention of adhesive strap-extension, there has remained only one difficult problem to be solved in fractures of the femur, and that was how to make efficient counter-extension without pain. This desideratum is now supplied by at least three good methods, so that we may truly say that the treatment of this class of surgical injuries has very nearly reached perfection.

ARTICLE XV.

ABSCESS OF THE GALL-BLADDER—RUPTURE AND EVACUATION INTO THE PERITONEAL CAVITY—DEATH—AUTOPSY.

By HENRY M. LYMAN, of Chicago.

Frederic Meuser, private in the 19th Reg't Illinois Vol. Infantry, aged 28, was admitted to the University Hospital, Nashville, Tenn., April 26, 1862, at which time he was supposed to be suffering with typhoid fever. He had been since the 19th of January, 1862, an inmate of various military hospitals in Kentucky and Tennessee, where he had experienced a succession of icteric attacks, which had permanently tinged his skin a deep tawny hue. He would complain of severe pain in the epigastric region; this would be followed by irritative fever, continuing for a few days, during which time the skin and conjunctivæ assumed a bright yellow tint. These symptoms would then gradually subside, leaving only the tawny complexion and the dull epigastric pain to indicate the persistence of disease. In this way he lingered, a great puzzle to his surgeon, till the 20th of June, 1862, when he was transferred to my

care. At this date the patient declared himself comparatively free from pain; he was able to leave his room, and to walk in the open air for a short time each day. Soon, however, he again began to complain of incessant pain behind the xiphoid cartilage, and a sensation of weight and fulness in the right hypochondrium. The skin resumed its icteric hue; the urine became high-colored; the stools were loose, watery, and bright-colored; the tongue was colored with short, white, moist fur; there was a succession of febrile paroxysms, alternating with periods of profuse perspiration, simulating by their regularity, a quotidian intermittent, the fever (usually without any previous chill) commencing a little before noon, and continuing till twilight, when the sweating stage would begin, and frequently persist till daylight the following morning. The region of hepatic dulness extended as high as the nipple, and below the costal cartilages the border of the liver projected two inches towards the umbilicus. The epigastric region was extremely sensitive to pressure.

The treatment which seemed to afford the greatest relief, consisted in the application of cups, sinapisms, turpentine stuper, and flaxseed poultices over the abdomen, accompanied by the administration of alkalies with colocynth. Quinine was ordered, but was soon discarded as ineffectual in controlling the febrile paroxysms, which were then proved to be non-malarial in their character.

The saffron-hued complexion of the patient soon gave place to a singular paleness which, however, did not wholly obliterate the ingrained tawny color of the skin. The febrile irritation of the system was also somewhat abated. On the 5th of July, the patient announced a complete translation of pain from the epigastrium to the region of the sigmoid flexure of the colon. He now preferred to lie upon his right side, and seemed to be relieved of a great deal of suffering. The right side of the abdomen was painless and dull on percussion, while the left side was everywhere resonant and sensitive to pressure. On the following day, but one, the deep-seated pain was restored to its original location, and the right side of the abdomen gave forth

its usual resonance. The patient contiuued to lie upon his right side.

From this time the region of the epigastrium became tense, and gradually distended. There were no more paroxysms of fever—only a dull and constant sense of distress, which required the frequent administration of morphine, to mitigate its severity.

Thus lingered our patient till the middle of July, when he experienced a sudden cessation of the pain which had tormented him. The whole abdomen now began to enlarge, till it seemed as if its walls could endure no farther expansion. There was considerable emaciation; the sufferer rested always upon his right side, and complained only of uneasiness and distress that pervaded the entire abdomen. The pulse was small, soft, and scarcely accelerated; the tongue retained, without change, the appearance which has already been described; the skin was dry but not harsh; the feet were somewhat swelled; the depending portion of the abdomen was dull on percussion, while its inferior portion was decidedly tympanitic.

At 6 o'clock, P.M., July 23d, the patient desired to relieve his bowels. He assisted himself to the stool, and after defecation returned to his couch, remarking, with a smile, that his attendant was not strong enough to help him. He then placed himself quietly in bed, when he gasped once or twice, and was dead.

Autopsy fifteen hours after death.—The head was not inspected. *Thorax.*—The apex of the right lung was adherent to the costal pleura. It contained several small calcareous masses, surrounded by a zone of chronic pneumonia. The whole of the left lung was bound by old adhesion to the costal pleura, and the posterior portion of its apex was puckered and contracted over a mass of chronic pneumonia as large as a lemon. The valves of the heart were healthy; the right ventricle contained a large colorless clot; the external surface of the organ was loaded with fat. The pericardium contained two ounces of serous fluid. The right pleural cavity also contained nearly a pint of similar fluid.

Abdomen.—The skin and superficial fascia were carefully incised from the xiphoid cartilage to the pubes. The point of a scalpel was then pushed through the fibrous aponeurosis near its attachment to the ensiform cartilage, and a jet of horribly offensive, chocolate-colored pus followed the withdrawal of the blade. A bloody fluid, unmixed with pus, escaped as the knife approached the umbilicus; and when its edge had reached the symphysis pubis, the table was deluged with pus, blood, and a clear serous fluid, which had occupied the hypogastric cavity, measuring, altogether, three or four ounces over two gallons. The intestines were void of solid contents, and were distended with gas; their peritoneal surface was a lustreless white, sprinkled with small dark spots, giving it much the appearance of mildewed linen. The intestinal coils were slightly adherent, united by coagulated fibrin which could be easily separated from the peritoneum. The pelvic cavity and the hollow of the right flank were filled with white clots like those which are often found in the heart after death. Passing the hand below the liver, a large number of gall-stones were discovered within the the peritoneal cavity, between the liver and the caput coli. The gall-bladder was utterly destroyed, only a small portion of the cystic duct remained. The hepatic duct and the common duct were entire, and contained yellow bile. The diameter of the common duct varied little from that of a goose-quill. The left lobe of the liver adhered in such a way to the anterior surface of the stomach, intestines, and anterior wall of the abdomen, that a continuous cavity extended from the gate of the liver to its anterior border, where the fundus of the gall-badder had been situated, then passing over the upper surface of the left lobe of the liver, to the left of the falciform ligament, and so on between the liver and the diaphragm to the spinal column. This was the cavity which had yielded pus and dark clots of blood. The gastric wall of this abscess was permanently stained with blood, which appeared to have issued from a twig of the cystic artery. The mucous surface of the stomach and intestinal canal presented no unusual appearance. The spleen was of a dark, chocolate color; it was not enlarged, and its

texture was firm. The kidneys, too, were scarcely diseased; their size was normal, and it was only by a yellowish discoloration of the cortical portion that they differed from the natural appearance of those organs. The liver was not enlarged, but its whole substance was of an olive-green color, and the lobules were centrally congested. The pancreas was firm and normal in its appearance. When removed from the body, the gall-stones filled a two-ounce vial; they varied in size from a mustard seed to a small olive.

Remarks.—This case presents an excellent illustration of the consequences of biliary concretions enlarging and multiplying within the gall-bladder. It is probable that gall-stones were formed during the early stages of the disease, which confined the sufferer to the wards of the military hospitals. The youth of the patient favors this hypothesis, for it is a rare thing to find gall-stones in a person under thirty years of age. Undoubtedly the hepatic disturbances resulting from the typho-malarial influences to which this man had been exposed, aggravated, if they did not actually originate the tendency which declared itself in so alarming a form.

It would seem that none of the larger calculi were ever forced through the biliary ducts, for the common choladoch duct retained its normal calibre, and the patient never experienced those agonizing colics which are supposed to indicate the passage of a large or angular gall-stone into the duodenum. The symptoms in this case were those which would indicate the passage of calculi which, though large enough to produce jaundice by occlusion of the common duct, were too small to excite severe pain by forcible dilatation of that canal. The final catastrophe, however, must have been provoked by the detention of a large stone in the cystic duct, where it may have excited the ulceration that destroyed the whole viscus, and discharged its contents into the peritoneal cavity. The reparative efforts of nature are well shown by the limits so speedily thrown about the various effusions: the rupture of the gall-bladder was attended by hemorrhage, which filled the right flank and the pelvic cavity with blood. The speedy coagulation of this effu-

sion retained the gall-stones in that portion of the abdomen which they reached, as they fell from their nidus. The fibrinous adhesions between the coils of the intestines confined the clotted masses which soon parted with their coloring matter. The bloody serum, in like manner, was so walled in that it never mixed with that transparent fluid, the most recent of all the exudations, which occupied the greater portion of the abdomen, until the peritoneal cavity had been evacuated, and its contents were mingled upon the dissecting table. Surrounded by inflammatory adhesions, the purulent effusion thrown off by the ulcerated hepatic surface (all that was left of the gall-bladder,) was steadily pushing itself upwards and outwards. Had the patient lived a few days longer the abscess might have perforated the diaphragm, or it might have pointed externally. The engorgement and discoloration of the liver seems to have resulted from the pressure to which the viscus was latterly subjected, impeding the sanguineous circulation, rather than from any specific local obstruction of the biliary flow. The insignificance of the symptoms which marked the gravest accidents is also worthy of note. The rupture of the gall-bladder occasioned nothing to excite alarm. It was attended with relief, rather than increase of pain. From that time the suffering of the patient seemed to grow out of the inconveniences produced by excessive abdominal distention; they were at no time characteristic of acute peritonitis, such as occurs after perforation of the gastro-intestinal canal, or rupture of the uterus. Death was the result of exhaustion, or, as some would have us believe, it was necessitated by the circumstances which caused the formation of a white clot in the right ventricle of the heart.

ARTICLE XVI.

RUPTURE OF UTERUS.

By E. HOLDERNESS, M.D., of Towanda, McLean Co., Ill.

Dr. N. S. Davis—*Dear Sir:*—Herein I send you the account of a case that may have some points of interest to your readers, if it is worthy of publication at all.

On the night of the 23d of February, I was called to see Mrs. D———. On my arrival, I found that she had had labor pains some half-hour previous, but they had ceased. During the few pains she had the waters broke. After waiting for a short time, I made examination per vagina, but could detect no presentation—the parts appeared to be relaxed, and in a pliable condition. From the time of my arrival (which was about 12 A.M.) until between 5 and 6 o'clock in the morning, she had no more pains, and appeared to rest easy. About this time (5 o'clock) pains commenced again, occurring at regular intervals, and I made another examination, but still could detect no presenting part. Her pains continued increasing in frequency and power, and between 6 and 7 o'clock, I detected the presentation to be that of the head, and it soon descended into the superior strait. Pains continued vigorous, and the head advancing slowly, but not sufficient for the amount of labor spent. I was satisfied I could feel the hairy scalp; to all appearances the membranes were broke, and that I could feel a soft substance, which I took to be one side of the placentia. I could not find either of the fontinelles, or any other feature to assure me of the position of the presentation. However, I did not see that I could do otherwise than wait patiently for a time, as there were no urgent symptoms, and see if the natural evolutions of the fœtus would not reveal something. The pains during the time had increased to the maximum of normal labors, but they appeared to accomplish but little. I found that nearly the whole force of the uterine efforts were expended upon the arch of the pubis; still the head had advanced some, and soon would have

distended the soft parts. About 8 o'clock the pains commenced lagging, and I gave her a fluid dr. of wine ergot; but the pains continued flagging, with but little progress of the fœtus. Soon after 8 o'clock I noticed that she was either fainting or sinking, but could conceive of no reason why. Actual hard labor had not been of long duration, and little if any hæmorrhage had occurred. I had no instruments with me to facilitate delivery, and did not see that I could turn and deliver in that way. Seeing that the woman was in danger, I requested help, and Dr. BALLARD, of Bloomington, was sent for. The pains still continued, but were very short, terminating very abruptly—she was evidently sinking very fast. I used brandy, ammonia, and camphor, in hopes to produce reaction, but all to no purpose; she continued sinking, and soon died. Dr. BALLARD did not arrive until near 10 o'clock, and during the time I had returned home and gone into the country about one mile and a-half, and on my return home, learned that Dr. B. was at Mr. D.'s, and requested my attendance immediately. On my return to Mr. D.'s, I found that Dr. B. had just taken the child away (dead, of course,) without any trouble, saying that the presentation was all right.

When she died I expressed myself that death had been produced by internal hæmorrhage, but when Dr. B. took the child away, there was but a small quantity of blood escaped. Something else was amiss, but where, and what was it? The womb had contracted to the usual size after child-birth. We tried to detect the presence of fluid in the abdomen in the usual mode, but failed to detect any. I found that by placing the hand on the abdomen, and making a waving, up and down motion, we could detect the existence of fluid within. Upon this revelation we had reason to suspect laceration of the womb, and such did prove to be the case, when cutting through into the cavity of the abdomen, which was full of blood. The rent appeared to extend from the cervix to the fundus. The rent was on the left side.

During the time of labor I detected nothing in the character of the pains different from normal labors, but I did notice that

she could not lay on the left side. She lay with the most comfort on her back.

The child proved to be very much deformed in the formation of its head; the skull was imperfect, having no frontal, and only a portion of the parietal bones, the occipital being nearly entire. That accounts for my being deceived with regard to the placential presentation. There was hardly any nose, and a very small mouth; the chin and forehead approximated closely. Where the right eye should have been, there was a growth much resembling a protuberant umbillicus, of at least an inch in length. The eye was forced over to the right, near an inch from its proper place. In the middle of the forehead there was a like protuberance, but not as long. The head was not of abnormal size.

I have been sorry since that we did not examine the uterine structures.

Query.—Can you give me any light? I saw nothing in the case to forewarn me of the mischief. I think the rent was gradual.

ARTICLE XVII.

CASES OF BAD VACCINATION IN THE ARMY.

By GEO. O. SMITH, M.D., Asst.-Surgeon 53d Regt. Ill. Vol.

On the 3d of February, 1864, I was ordered to assume charge of the convalescent camp of the 4th Division, 17th Army Corps, established at Hebron, Miss., eight miles east of Vicksburg.

I found in camp thirty-one cases of vaccination assuming a most unusual appearance. It appears from the history of the cases that on the 15th of December, 1863, two privates (brothers) went into the city of Vicksburg, and found another soldier, whom they represented as a man of bad habits, and who showed marks of dissipation. From him they were vaccinated. A pustule was formed, but instead of maturating, it degenerated into a corroding ulcer, with other symptoms to be described hereafter. From these two men twenty-nine others of the same

regiment (23d Indiana) were vaccinated about the 25th of December. Ten of these had been vaccinated before, and had a good mark on their arms. Every one of these twenty-nine took the vaccination; the puncture beginning to inflame immediately after the operation—those who had been vaccinated before taking as readily as the others. These cases all assumed pretty much the same appearance, with the same symptoms, some being more aggravated than others, and a description of any two would be a history of all.

These cases came under my notice on the 4th of February, 1864, at which time Corporals BENJ. DODD and J. MONKS, of Company C, 23d Indiana, came to me and wanted me to look at their arms. On examination of BENJ. DODD, I found his right arm much swollen from the shoulder to the hand, indurated from previous infiltration of lymph. A dark appearance pervaded the whole surface. The skin was abraded about the point of the elbow the size of a man's hand; the tissues beneath were rough, ragged, dry, and scarlet red. At the point of vaccination on the arm was a dark, foul ulcer, an inch and a-half in diameter, and a-half inch deep, with raised, thickened edges. On the fore-arm were two small ulcers a-half inch in diameter, a line in depth, with raised, thickened, indurated edges, having the appearance of venereal chancres. The axillary glands were greatly swollen and indurated, the skin having a dark purple color.

The case of J. MONKS was as follows:—A large foul ulcer like the one described above at the point of vaccination. Two inches below was a well-marked chancre in size and appearance like those described above.

On the fore-arm of DODD, in the axilla, was an abscess, from which I drew one half pint of thin pink-colored pus. Small, red, and hard pimples, the size of a small pea, pervaded the whole face and back.

In most of these cases there has been from the beginning well-marked hectic fever, with inability to sleep at night, and wandering pains in the back and limbs, with loss of appetite. Conjunctivitis accompanied most of the cases, and several had

inflammation of the Schniderian membrane. All are and have been unable to do duty.

On the 18th of February, I sent most of these cases to the General Hospital, and so passed from under my care.

ARTICLE XVIII.

NOTES OF A CASE OF ERYSIPELAS.

By D. W. YOUNG, M.D., of Aurora, Ill.

Read before the Aurora City Medical Association. March 23d, 1864.

GENTLEMEN:—With your permission I will read the following notes of a case of erysipelas, that occurred in my practice recently. I do not present them with the expectation of offering anything new either in theory or practice, but for the purpose of adding further proof of the remarkable powers of muriated tincture of iron in arresting and curing erysipelas. I hold that it is only from the accumulated experience of practice that we can arrive at safe and certain results. In order to accumulate such experience, we must take notes and report our cases, otherwise no one but our individual selves will ever be benefited by our experience—medical literature will never be any the better for our having lived and practiced medicine. I regret that there is such an apparent apathy on the part of the older members of this association in reporting and discussing their important and interesting cases. I know they have them—treat them—and ought to report them. We tyros in the profession certainly need and are entitled to their experience—otherwise we must travel over the same uncertain ground over which they have travelled. Take our foreign text-books as a starting point, and then grope our way along the uncertain and mysterious avenues to experience. This is all wrong, gentlemen. You are unjust and illiberal. You are hiding your lights under a bushel. The good book pronounces that wicked. You should volunteer and report your cases; and thus give us your experience in managing and treating those grave diseases that

are so liable to destroy our fellow-beings. In my judgment, there are too few medical associations; and those that do exist do too little in the way of reporting and recording their experience. A vast amount of information, and valuable unrecorded medical knowledge, is buried with almost every practitioner of medicine. This is lamentable—it is wrong—it is robbing medical science and humanity. Every practitioner of medicine should belong to some medical association, and there record and report his experience in the treatment and management of important diseases. Then would we accumulate the experience of the medical profession. But enough of this, gentlemen, excuse the digression. And now to the case of erysipelas:—

Wednesday morning, March 16, 1864.—I was called to see Peter Feischel, a stout and well-developed German boy, aged three and a-half years. I found him lying in bed comatose, and the left side of his face, head, and neck enormously swollen, very hard, red, hot, and shining. The swelling and inflammation extended down the neck and up over the cheek, face, and scalp, as far as the centre of the head. The left eye was closed, and the subcutaneous cellular tissue about it very much distended. There was an irregular abrupt elevated margin surrounding the disease, over the face and neck; while the scalp, as far as the disease extended, was very much swollen and puffy. The left side of the body, and the left arm and leg were enlarged and edematous—but neither red, hard, nor hot. The skin over this portion of the body was cool and livid. It had a peculiar look and feel. There was an emphysematous condition of the entire left side of the patient. Parotid and submaxillary glands on the left side largely swollen, red, and hot. Rolls his eyes constantly, and grates his teeth occasionally. Pulse 130 per minute, quick and feeble. Respiration slow and difficult. Skin cool and clammy. Bowels have not moved for several days. Passes his urine involuntarily.

Upon questioning his parents how long he had been sick, I obtained the following history of his case:—On the afternoon of the 6th of March, this little fellow and an older brother were seated together beside the stove with their playthings, had a

boyish altercation, and the older brother pushed him so that he fell against the stove, and burned a small spot on the left side of his neck, just below the ear. It seemed so trivial that the parents paid no attention to it, and he soon resumed his sports and plays. He continued well, and played about the house the next and the succeeding days, as usual, so that they thought nothing further about the matter, until the next Sunday, just a week from the time of the accident, when he began to complain of being chilly, and his head aching. Then they noticed a small, bright red spot on his left cheek, just above where the burn had been, which was now healed. He complained considerably on Sunday afternoon; slept poorly that night; grew worse on Monday and Tuesday; and, finally, on Wednesday, I was called, and found him as above described. The condition of the little patient, when I first saw him, was unpromising indeed. I gave them a very doubtful prognosis, and ordered as follows:—℞. Soda bicarb. grs. vij., hydg. sub. mur. grs. v. Mix, and give immediately. Also, tinct. ferri chloridi, gtt. x. every hour: providing the stomach retains that amount without any unpleasant symptoms. Cover the inflamed surface with a warm bread and milk poultice. Keep the room dark and quiet as possible.

Thursday morning, March 17th, 9 o'clock A.M.—Cathartic has operated twice thoroughly. Patient is still comatose. The emphysematous appearance has disappeared from the left side, outside of the erysipelatous swelling. Swelling about the face, neck, and scalp about the same; I think it is not quite so red, hard, or hot. Respiration better; skin warmer; pulse 120 per minute, fuller and softer. Secretions still passed involuntarily. Patient is more restless. Pupil of left eye largely dilated and stationary; still rolls his eyes and grates his teeth. Ordered as follows:—Continue the iron every hour, and increase one drop every second dose, until xv gtt. are given every hour, providing he retains it well. Continue the bread and milk poultices, change them often. Also give, ℞. Quinia sulph. grs. j., pulv. Doveri, grs. ij., every three hours. Feed him chicken broth or beef tea liberally.

Friday morning, March 18th, 9 o'clock A.M.—Patient still comatose. Swelling about the left side of head less. Erysipelas has extended considerably on the right side, but is not so intense. The iron is certainly modifying the disease decidedly. He retains the fifteen drop doses without any trouble. Pupil of left eye still dilated. Does not roll his eyes nor grate his teeth this morning. Sleeps more quietly. Color and temperature of surface about the same. Discharges still involuntary. Respiration free and easy. Pulse 122 per minute, slower and soft. Continued all the treatment as at last visit, only increase the tinct. ferri chloride one drop every second hour, until he takes gtt. xx. every hour, if he retains it well.

Saturday morniny, March 19th, 9 o'clock A.M.—Patient still comatose. Swelling on left side disappearing rapidly, and desquamation commencing. Disease has extended a little on the right side, but is fading. He opens his left eye, and the pupil is not dilated as much, and begins to respond to light. He bears the medicines and nourishment well. Called for a drink of water in the night, which is the first word he has spoken since I commenced the treatment. Feces and urine still passed without any apparent knowledge of the patient. Skin warm and moist; pulse 118 per minute. The cellular tissue about the right eye is becoming considerably distended, and the eye partially closed. General aspect of patient bad. Head and face are enormously swollen, and he has a bad look—almost frightful. Continue same treatment. Increase the muriated tinture of iron one drop every second dose, until gtt. xxv. are taken every hour. Continue quinine and Doveri as before. Feed him liberally.

Sunday morning, March 20th, 9 o'clock A.M.—Patient is better. Retains medicines and nourishment well. Passed a good day and night since last visit. Erysipelas has not extended any and is fading. There are two small spots, one on right cheek and one on nose, that look angry and bad. Made a solution of nitrate of silver and touched them lightly. He is now semi-comatose. Passes his secretions involuntarily; but rouses when spoken to and attempts to speak. Swelling about the

face disappearing. Opens both eyes partially, and the pupils respond to light. There is no rolling of the head nor grating of the teeth. Skin warm and moist; pulse 98 per minute, full and soft. I feel encouraged about him; think he may recover; but urged the greatest care and caution in his nursing and management. Ordered that the room be kept dark and perfectly quiet. Continued all the medicines and applications as at last visit.

Monday morning, March 21*st*, 9 *o'clock A.M.*—Found patient much improved. The swelling is nearly gone and the erysipelas *played out.* Retained the medicines and nourishment well. The xxv. gtt. doses of the muriated tinct. of iron every hour have been taken regularly and retained without any nausea or vomiting. He opens both eyes well, and is rational. Begs for his clothes and to be dressed. Pulse 94 per minute and regular. Bowels open, urine free. Skin warm, soft, and moist. Desquamation free and extensive. Hair falling out rapidly. Begs for food constantly. Continue the quinine and Dover's powder as before. Reduce the iron to xx gtt. once in two hours. Discontinue the poultices.

Tuesday morning, March 22*d*, 9 *o'clock A.M.*—Found patient bolstered up in bed with his clothes on and playthings around him. Swelling has pretty much disappeared and so has the erysipelas. Desquamation extensive. Hair falling off profusely. Altogether he presents a decidedly shabby appearance about the head and face. Bowels act well; urine free and very high colored. Pulse 92 per minute, slow and soft. Slept very quietly all last night. Appetite craving. Stop the quinine and Dover's powder. Reduce the iron to x gtt. once in four hours. Feed him liberally with animal broths, but not too much at a time. Keep him quiet and from scratching his face —to prevent this put gloves on his hands.

Wednesday morning, March 23*d*, 11 *o'clock A.M.*—Found patient improving nicely. Slept well all night. Pulse 90 and regular. Everything looks well. Bowels act well; urine free and not so high colored. Reduce the tinct. ferri to v gtt. every six hours, for to-day, then discontinue it entirely. Cautioned

them to keep him warm, well clothed, and nourished. Discharged him convalescent.

Remarks.—The principal points of interest in this case are, first, the severity and persistence of the disease; second, the large doses of muriated tincture of iron administered. It will be noticed that xxv gtt. were given every hour for two days and nights. This, in a boy three and a-half years old, I admit is heroic medication. The case was an extensive one, and demanded, I thought, extreme measures. In treating the case I adopted the same rule that I am in the habit of following in treating all disease. I select my remedies and then push them until I see some effect from them. Here I commenced with x gtt. every hour, continued that dose for two days; it produced no unpleasant symptoms and but little if any amelioration of the disease. Then I increased one drop every second dose until xv gtt. were given every hour; continued that dose two days and nights. It produced no unpleasant effects, and only seemed to hold the disease stationary. Then I increased one drop again every second hour until xx gtt. were given every hour. This dose was also continued two days and nights, produced no unpleasant symptoms, but a marked improvement in the disease. Consciousness began to return. Pulse became slower and fuller. At the end of the second day, the dose was again increased one drop every second dose until xxv gtt. was given every hour. This dose was also retained equally well; I could discover no unpleasant symptoms from it; it controlled the disease immediately, and the patient improved rapidly. I obtained the desired result, and therefore had no occasion to increase the dose further. Possibly there may still be some doubt in the minds of some of the members of our profession as regards the antidotal powers of muriated tincture of iron in erysipelas. There are none in mine. I have used it a long time extensively, both in civil and military practice. I am a convert—a full believer.

Selections.

ON THE TREATMENT OF RHEUMATIC FEVER.

By Dr. J. BIRBECK NEVINS, Lecturer on Materia Medica, Royal Infirmary School of Medicine, Liverpool.

[The plan of treatment recommended by Dr. Nevins is one which he has tried extensively for above fifteen years, though he does not claim the credit of originality. During this period he has also tried the various plans in vogue, viz., the opiate, the alkaline, the lemon-juice, and the do-nothing treatment, but he has always returned to his accustomed plan.]

It is impossible to observe many cases of rheumatic fever without being struck by the periodicity of the disease, as shown by the general aggravation of the pain and other symptoms as night comes on, and also by the copious sweating which enfeebles the patient, rather than relieves him. The long continuance of the illness, and its liability to return after apparent recovery, and the length of time requisite for regaining strength, are also well known features. In some of these particulars, but especially in its periodical exacerbations and in its sweatings, Heberden and others, and Dr. Davis, of University College, in a very able paper on the subject, have at different times noted its similarity to ague, and advocated the employment of cinchona or quinine for its cure; and it is this drug upon which I look as the basis of the treatment to be proposed to you. At the same time the experience of the profession generally has shown the great value of iodide of potassium in chronic rheumatism; and, remembering the tendency of this disease to become chronic, I always combine this medicine with the quinine, and commence their administration *from the earliest date at which the patient comes under my care.* The presence of actute pain and high febrile excitement does not, in my experience, form any objection to their employment; and the thick creamy fur upon the tongue disappears more rapidly under their use than under the different methods which I have compared with it, in my own practice, or when noticing that of my brethren in the profession. The dose never exceeds two grains of quinine four times a day, with five grains of iodide of potassium added to each dose.

The pain and loss of rest are, however, so distressing to the patient, that we have been advised to administer opium in quantities only limited by the effect produced. And the employment of this drug as far as may be necessary for subduing the pain is a very important point; and I therefore always leave two or three doses of opium pill or of Dover's powder with the nurse, which are to be given successively, if the patient is in severe pain; but I very rarely indeed find that the patient has even asked for more than a single dose in the twenty-four hours, which I attribute to the speedy and more permanent relief obtained by the followlng element of the treatment, to which I attach very great importance. This is, *the employment from the very first of steam-baths, even when the patient is so helpless that it is impossible to move him from the bed* on which he is lying. These steam-baths relieve the pain and check the distressing perspirations in a degree which I have failed to obtain by any other mode of treatment; and they are administered with the greatest ease in the following manner:—

A couple of common red bricks are to be placed in an oven hot enough for baking bread, and in half an hour or little more they are sufficiently heated for the purpose. The patient's body-linen having been previously removed, these two bricks are to be folded up in a piece of common thick flannel thoroughly soaked in vinegar and laid upon two plates; and one is to be placed about a foot distant from one shoulder, and the other about equally distant from the opposite leg;* and the bedclothes are then to cover the bricks and the patient closely round his neck. A most refreshing acid steam-bath is thus obtained; and the supply of steam may be kept up, if necessary, by removing one brick and replacing it with another hot one kept in reserve. When the patient has been in the bath for about fifteen or twenty minutes, the bedclothes and plates should be removed, and *the patient instantly mopped all over very rapidly with a towel wrung out of cold water*, and then should be quickly rubbed dry.† Dry warm linen must be put on at once, and dry bedclothes must replace those which were on the bed

*Care must be taken not to put the bricks too near the body. I have known the thigh blistered in a patient who was unable to move away from the heat which was accidentally very near it. A dry napkin thrown over the wetted one will prevent this accident, if the bed is too narrow to allow sufficient space.

†The under sheet can be removed, and a dry one substituted by fastening the corners of the dry sheet to those of the damp one. Very little difficulty is generally met with in simply drawing the old sheet from under the patient, when the dry one follows it, and is left in its place.

previously. The patient generally experiences great and speedy relief from this bath. The exhausting acid sweats are materially diminished; and the necessity for opium, as already mentioned, is almost at an end.

But here the objection naturally presents itself: a patient in rheumatic fever suffers so severely from the slightest attempt to move him, that we are frequently obliged to leave him several days without changing his linen, from the pain occasioned by the attempt to remove it even leisurely; and we have just been told to change it quickly, which implies that the case cannot be a very severe one, or this direction could not be carried out. The difficulty is really of the most trifling character, if the simple precaution is adopted of tearing the night-shirt open from top to bottom down the back. The sleeves are then slipped over the patient's arms almost without moving them; and the torn edges of the linen are gently tucked under his side, from which they can be just as easily withdrawn the next day. And by this means he is freed from the discomfort of lying day after day in linen soaked with acid perspiration; and this is done without the smallest pain to himself or trouble to his nurse. For many years I used large lumps of quicklime, and wrapped them up in cloths soaked with cold water; and as soon as the lime began to slack, the patient was enveloped in a steam-bath from simple water; but in many places it is difficult to obtain quicklime, and the vinegar is also more refreshing to the patient; so that the vinegar and hot bricks have now quite superseded the lime-bath.

These, then, are *the essentials of the treatment: quinine and iodide of potassium from the first, and the steam-bath, with the subsequent cold sponging;* and as an adjunct, opium in small doses, when necessary, to procure sleep.

It now remains to speak about the success of the treatment. During the fifteen years it has been in use, I have only had occasion to apply a blister over the heart in three instances; and this was done because the patient complained of uneasiness in the chest, not because there was any distinct evidence of pericarditis. There has not been one case of distinct rheumatic affection of the heart; but the absence of clinical reports puts it out of my power to state how many cases have been thus treated. I can merely say that they have been numerous.

Next, as regards the duration of the disease; it is extremely rare that it is necessary to give two-steam-baths in bed, the patient being almost always able to have the second whilst sitting upon a chair; from which you will draw your own conclu-

sion as to the rapidity of improvement. I am surprised when the patient is not able to walk about the room, a little at any rate, in little more than a week; and I have a strong impression that he is more frequently able to do this within the week than not. But here, again, the abscence of exact reports must be taken into account. I further think that from two to three weeks is the average duration of the case before the patient is able to walk up and down stairs, and to go out of doors for exercise or pleasure. Relapses are not common; and the patient has not the lingering convalescence which I have observed under other methods of treatment.

The steam-baths and subsequent cold douche should be continued after the patient is able to walk about, as they contribute to the healthy action of the skin, and promote the free mobility of the joints.*

If there is great tenderness of any one particular joint, an opiate embrocation, containing in addition either chloroform or tincture of aconite should be gently painted over the part two or three times a-day; but, in the early stage, the employment of friction appears unadvisable whilst the pain is very acute.

The recommendations of the method now presented to you are: that the patient's strength is husbanded from the first, and he has neither the protracted disease nor the lingering convalescence often observed. Pain and sweating are more quickly relieved than by any other treatment I have seen. Relapses are very rare; and so far I have not seen any case of cardiac affection occurring as a consequence of the rheumatism. I have a strong conviction that, if the method is fairly used in two or three cases, it will leave the same favorable impression upon the minds of those who try it that it has produced upon my own, and upon the students who have watched its employment in the hospital to which I have alluded.—*British Medical Journal*, *August* 1, 1863, *p.* 113.

*These baths are very easily given by placing the patient naked upon a chair, and putting a can containing a couple of gallons of boiling water under it. Blankets are then to be folded round his neck, and made to surround him like a tent, reaching to the floor. In about five or ten minutes, a red-hot brick should be put into the can, which renews the supply of steam. The patient soon perspires; and in fifteen or twenty minutes the blankets should be removed, and a couple of quarts of cold water should be poured over his shoulders: or, if he is afraid of such heroic treatment, he should be mopped from head to foot with towels wrung out of cold water. By this means he is invigorated instead of feeling weakened, and depressing perspirations do not follow the bath. The patient should sit upon a pillow or doubled blanket, on a close-bottomed chair, not upon an open cane-bottomed one. I have known a patient scalded by the accidental neglect of this precaution.

ON GOUT, RHEUMATISM, RHEUMATIC GOUT, AND SCIATICA.

By HENRY W. FULLER, Physician to St. George's Hospital.

[Dr. Fuller considers rheumatic gout a disease *sui generis*—totally distinct from gout, and equally so from rheumatism. It resembles scrofulous inflammation more nearly than rheumatism in its nature. "Rheumatic gout has a history and pathology of its own."]

Pathological research has shown that in the earliest stages of the disease the capsules of the affected joints are distended with fluid, the synovial membrane is thickened and intensely vascular, and vascular tufts or excrescences exist at the margins of the cartilages; that as the disease progresses the fluid is absorbed, the interarticular fibro cartilages are also absorded, and eburnation of the articulating surfaces takes place; that the heads of the bones become enlarged and altered in shape by the occurrence of interstitial absorption in some parts, and of irregular osseous deposits in others; and that foreign bodies of varying consistence and character are often developed, both within and without the joints—bodies which are sometimes cartilaginous, sometimes bony, sometimes attached by longer or shorter pedicles to the synovial membrane, or to the ligamentous structures, and at others are loose within the articulation. It has shown that these changes may take place slowly, without any general febrile disturbance, or any acute local inflammatory action; and on the other hand, that they may be preceded and accompanied by fever, and by pain, heat, and inflammatory swelling of the parts; that the bursæ and sheaths of tendons in the vicinity of the affected joints are prone to be implicated in the mischief, but that neither in the joints nor in the adjacent bursæ or sheaths of tendons are any of the ordinary products of inflammation found—there is no lymph, and no pus, and no urate of soda, as in gout. In other words, it has shown that the characteristic changes which occur in the joints as the result of rheumatic gout take place independently of active inflammation, and that the acute inflammatory action which sometimes precedes or accompanies these structural changes is simply a complication of the disorder, and by no means necessary to its perfect development.

And what are the conditions under which these structural alterations in the joints occur? They are not met with in the robust or vigorous, in well-fed persons with sound constitutions

and sedentary habits; they do not arise, like the deposits of urate of soda in gouty men, in connection with excessive indulgence in the luxuries of the table, and defective excretion consequent on a diseased condition of the kidneys. On the contrary, they are more common in women than in men; very frequently arise in persons who lead a temperate life, and are small eaters, and never present themselves in persons who are constitutionally sound, unless they have been subjected to some cause of nervous exhaustion and enfeebled health. Their favorite victims are the offspring of consumptive parents, and especially weakly women—women whose constitution is either originally delicate and unsound, or who, from some cause or another, have fallen into ill health. Amongst men, the most common exciting causes of the disease have appeared to me to be the cachexia, which oftentimes follows excessive venery or syphilis, or the sleeplessness and exhaustion consequent on ill-treated gonorrhœal rheumatism, or the depression resulting from anxiety, or from excessive and long-continued mental exercise, or from over-fatigue or chill in persons of a delicate constitution or scrofulous tendency; whilst in women the disease is often traceable to the cachexia entailed by perversion of the uterine functions. It attacks the girl just arriving at puberty, in whom these functions are ill-performed; it invades the stiffening articulations of the woman who has arrived at that time of life which is marked by the cessation of the monthly periods; it shows itself during the state of debility which follows a miscarriage, or a difficult or protracted labor, more especially when the labor has been accompanied by flooding; and it is a common sequel of over-long suckling.

But whatever the exciting cause of the disease, its primary essential cause is the same in all instances; and although we are unable as yet to point out the precise nature of that cause —although we know little of the morbid chemical actions which take place, and are at a loss to account for the peculiarities in the nutrition of the affected parts by which this form of disease is accompanied, it is impossible to doubt the existence of a special form of constitutional disorder. The history of the complaint, its course and symptoms, and its pathological effects, all indicate the agency of some cause distinct from that which occasions gout or rheumatism. Our inability to demonstrate the nature of the chemical changes in the blood, or, in other words, to prove the formation of a special poison, is not a valid argument against the existence of such a poison. The same line of reasoning would be equally conclusive against the existence of

any special form of blood-disorder in small-pox, typhus fever, scarlatina, and pyæmia. The fact is, our means of analysis of organic fluids are at present so imperfect, and we know as yet so little of the influence exerted on the functions of assimilation and excretion by modifications of the nervous power and other similar agencies, that in this, as in other forms of disease, we cannot even offer a reasonable conjecture as to the character of the chemical changes which take place, or as to how those changes are brought about. All that chemistry has as yet enabled us to assert is the bald fact originally pointed out by Dr. Garrod that the blood in these cases does not, like the blood in gout, contain uric or lithic acid.

Thus, then, as there is no very certain mode of diagnosing this disorder, and as, if it is to be treated successfully, its special character must be recognised early in the attack. I will endeavor to bring before you certain facts which will serve as guides to a correct diagnosis.

I would premise that the disease may make its approach either in an acute or in a chronic form. In the latter case, its true character is not likely to be mistaken; but in the former it often resembles an attack of acute rheumatism so closely as to tax our powers of diagnosis to the utmost. There may be heat of the skin and profuse perspiration, furring of the tongue, loading of the urine, acceleration of the pulse, and pain, redness, and swelling of the affected joints—symptoms which, to a greater or less degree, are always attendant on acute rheumatism. But even from the first there are certain peculiarities which ought to excite suspicion as to its nature. The skin, though hot, is less so than acute rheumatism; the perspiration does not possess the peculiar rheumatic odor in any marked degree; the pulse, though quick, is feeble; the tongue is usually less furred; and the local pain and swelling are seldom confined to the knees and other larger joints, but invade the wrist and small joints of the fingers; they are more persistant than the inflammatory swellings of true rheumatism, and they attack a larger number of joints simultaneously.

If the true character of the disorder is overlooked at the first, a few days' observation at the bedside ought to rectify the diagnosis. The symptoms rarely yield to alkalies; the tongue cleans, the heat of the skin subsides, and any slight odor which may have attended the perspiration speedily disappears; but the skin remains constantly bedewed with moisture, and becomes daily more flaccid and less elastic, the pulse gets weaker, and the pain and swelling of the smaller joints assume a more prominent

aspect. The inflammation, however, though continuing so obstinately, is not so acute, and does not appear to threaten the integrity of the joint, as true rheumatic inflammation does under similar circumstances. When true rheumatism fixes obstinately on a joint, the fear of perminent mischief and anchylosis of the joint at once presents itself to the mind. The inflammation of the other joints subsides, but the pain and swelling in the one joint increase daily; and it is obvious to the merest tyro in medicine that if that joint be not kept motionless, and leeches, blisters, and fomentations, or mercurial ointment applied, anchylosis of the joint is the most favorable issue which can be expected. But it is otherwise in respect to the inflammation of the joints which accompanies rheumatic gout. Rarely, indeed, in the acute form of the disease, is the inflammation confined to one joint; on the contrary, three or four, or even a larger number, of the joints remain affected throughout. There is not the same heat, or redness, or tenderness of the effected joints; the fear of adhesive or suppurative mischief does not arise; the application of a splint, and of leeches and blisters, does not suggest itself; and although the joints may remain permanently enlarged and distorted, they do not become anchylosed.

When the disease makes its approach more slowly, and assumes from the first a non-acute or chronic form, its features are much more distinctive. The patient feels weak, languid, and uncomfortable; she is oftentimes chilly, but nevertheless perspires on the slightest exertion; the appetite is capricious, the pulse feeble, the urine often pale and clear, and the spirits are much depressed. Up to this time probably there may have been no swelling of the joints, and possibly no wandering pains in the limbs, so that no suspicion is entertained as to the nature of the impending mischief. The ill-health is attributed to the effect of a mercurial course, to the drain resulting from an excessive flow of the monthly courses, to profuse leucorrhœa, to amenorrhœa, or to one of the many causes which are productive of ill-health, and which may have been present in the particular case in question. But after a longer or shorter period, some pain or stiffness is perceived in one or more of the joints. Not unfrequently a knuckle becomes stiff and swollen for weeks or months before any other joint is effected; and even though the knees or other of the larger joints be enlarged, the knuckles rarely escape. They are seldom red, inflamed, or very tender to the touch; on the contrary, they are relieved by gentle friction, and will often derive benefit even from tolerably active rubbing. Effusion within the joint is the principal cause of their

enlargement; but the bursæ and sheaths of tendons around the joint are also implicated, and are felt as circumscribed swellings. Moreover, the mischief is seldom confined to the immediate vicinity of the joints, but the sheaths of tendons may be felt hard and swollen in the palms of the hands and in other parts more or less remote from the primary seat of inflammation.

In the more advanced stages of the chronic form of the disorder, the peculiarities of the case become even more apparent. Depression of spirits is a prominent symptom; the constant clammy moistness of the skin is quite characteristic; the extraordinary number of joints implicated in the mischief is unlike what is observed in any variety of true rheumatism; and the form of the articular swelling is such as cannot possibly be confounded with the effects of rheumatism. It is obviously due, in great measure at least, to enlargement of the extremities of the bones themselves, and not merely to effusion within their capsules, or to the thickening of the surrounding structures. Thus a material alteration occurs in the form, and oftentimes in the direction of the joints. The fingers, for instance, are drawn towards the ulnar or outside of the hand, and take a permanently oblique direction; whilst the enlarged and partly dislocated extremities of the bones, more especially of the metacarpal bones, project in every variety of form, and constitute the nodosities which have been described by Dr. Haggarth in his "Clinical History of Disease."

Thus, then, to sum up the principal facts which have a practical bearing on the treatment of the disease, it may be stated: 1st. That the malady originates in mal-nutrition, resulting not unfrequently from some hereditary infirmity of constitution, but sometimes in connexion with cachexia induced by a variety of causes which exhaust the nervous system. 2d. That the local changes to which it gives rise are essentially distinct from those produced by active inflammation, and more nearly resemble the results which might be expected from a slow perversion of nutrition; indeed, a similar tendency to the formation of exuberant osseous growths around the joints whilst the articular textures within are suffering destruction and decay is observed in malignant disease of the joints, and in various strumous affections of the joints, both of which are connected with a constitutional taint. 3d. That whether in an acute or in a chronic form, the malady is one and the same, due to the same cause, connected with a similar failure of tone in the system, and productive of similar changes in the joints; the only difference observable between the results in the acute and chronic

cases respectively being that in the former they occur more rapidly than in the latter.

If this view as to the nature of the disorder is correct,—and its whole history leaves little room for doubt on the matter,—it follows that any treatment to be successful must have for its object the sustentation of the general health and the restoration of tone to the system. Whilst this is being effected, means may be taken to subdue the local irritation of the joints, and thus to mitigate our patient's suffering; but the primary object must be to improve the health, and so to check the continuance of those actions on which the enlargement and distortion of the joints depend. The remedies which are most serviceable in rheumatism and gout are of little avail in this form of disease. Colchicum, iodide of potassium, guaiacum, hot baths, vapor baths and other similar remedies, if prescribed with a view to eradicate the disease, prove mischievous rather than beneficial. They depress and enervate the patient, who is already low and exhausted; and thus they serve to establish the disorder which they were given expressly to get rid of. In private no less than in hospital practice the mischievous results which follow this mode of treatment almost daily force themselves on my attention. In short, if the remedies above named are to be employed at all in the treatment of rheumatic gout, they should be used cautiously as alteratives in conjunction with tonics, and should not be administered as agents to be relied upon for the cure of the disease. The more I have seen of this form of the disorder, the more thoroughly have I discarded the views which, in common with other medical men, I formerly entertained respecting its treatment, and the more completely have I learned to trust to tonics and occasional alteratives. In the acute stage of the disorder it may be necessary for a few days to administer alkalies and alterative doses of blue-pill or calomel, and to restrict the diet to broth or beef-tea; but when once the true nature of the malady has declared itself, I believe that in the majority of instances the more successful plan, notwithstanding the acute character of the symptoms, is to administer bark or quinine in combination with small doses of alkalies, and as soon as possible to interpose and check the continuance of the enfeebling, clammy perspiration by means of a cold shower-bath or the dripping-sheet. Indeed, whether the disease be in an acute or in a chronic form, the general state of the system and the ever-varying condition of the secretions are the only rational guides to treatment. If, as often happens when the disease is chronic, the secretions are tolerably regular and healthy, if the

bowels are acting daily, and the alvine dejections are of a natural color, if the urine is clear, and remains so on cooling, and if the skin is neither dry nor damp and clammy, the most effectual remedies are bark, quinine, strychnine, iron, in its different forms, cantharides, arnica, sarsaparilla, the mineral acids, and cod-liver oil; and they must be given in doses proportioned to the amount of depression they have to counteract; further, their action must be assisted by fresh air and exercise, change of scene, and a generous diet: meat twice or three times daily, with a full allowance of porter or ale, and wine, are essential adjuncts to the treatment. On the other hand, if the motions are pale, calomel or blue-pill must be given as alteratives; if the urine is loaded with lithates and the bowels are torpid, these secretions must be regulated in the ordinary way by the exhibition of purgatives and alkalies; the diet at the same time must be more or less restricted, and malt liquor prohibited. But even in these cases care must be taken not to depress the patient; and while brandy, or gin, or whisky is substituted for the malt liquor and wine, an endeavor should be made to discover some nutritious food which the patient can digest and assimilate. If the skin is clammy, and the shock of cold water is followed by reaction and warmth of the surface, a cold shower-bath or the dripping-sheet should be employed daily, for nothing tends so powerfully to stimulate the capillary circulation and restore the tone of the system.

You will always do well to inquire whether your patient ordinarily enjoys better health in winter or in summer, in cold weather or in warm,—as the reply you obtain will serve as a tolerable trustworthy criterion as to whether she is likely to be benefited by cold water. When a patient who is suffering from rheumatic gout tells you that she is usually stronger and more vigorous in cold weather than in hot, you may confidently recommend the daily use of a shower-bath. It will brace and stimulate her, and will contribute as largely to her recovery as any medicine you can administer internally. There is nothing more remarkable in the whole range of therapeutics than the rapidity of the improvement sometimes observed under the influence of this remedy. Even when a patient tells you that she is not much affected by temperature, but that she is often chilly and dreads cold water, I would urge you not to be deterred from having recourse to its assistance. The chilliness in such a case is dependent on the vitiated condition of her blood, and not on any innate delicacy or any deficiency in her power of resistance to cold: consequently the shower-bath, by imparting a stimulus

to the system, will conduce to the better performance of the various functions of the body, and so to an improvement in the condition and circulation of the blood, and to a cessation of the sense of chilliness. If you are not consulted until the patient has been greatly reduced by illness, and has a feeble pulse, and scarcely sufficient power to enable her to rally from the shock of the shower-bath, you may order the dripping-sheet, as you have seen me do, with excellent results, under similar circumstances. The shock is somewhat less, and so also is the chilling effect on the system. But I would have you bear in mind that it is impossible *a priori* to determine whether reaction will take place after the shock of cold water. Sometimes a person whose circulation is so weak as to render it improbable that she would be able to withstand it, will feel refreshed and invigorated by it, and will glow with warmth in a few minutes afterwards; whereas, another person, apparently stronger and less reduced by illness, will be chilled and exhausted by it, and will suffer from cold the whole day. One or two trials, however, will settle this question, and the bath is such an important agent in the treatment of these cases that the matter ought never to be allowed to remain undecided. The only cases in which its effect is doubtful are those in which the patients, even when in health, were always better in summer than in winter, and have always suffered from cold. In these cases, if the clamminess of the skin appears to require the use of the cold shower-bath, a small quantity only of cold water should be employed. The patient, when taking it, should stand in hot water, and a cotton sheet should be thrown round her as soon as she steps out of the bath. With these precautions there are few persons who cannot withstand the shock of the water, and as few who will not benefit by it.

Another point is relative to the use of a cold douche, and the means of obtaining one. A few jugs of water poured on the affected joint are of little or no service in these cases: the force of the water is not sufficiently great, nor is its action sufficiently sustained. In none of the London or provincial hospitals with which I am acquainted, nor in most of the towns in the Un Kingdom, is a good douche-bath to be found, and therefore if we wish to avail ourselves of this valuable agent in the treatment of stiffened joints we must either send our patients to a hydropathic establishment, where this species of bath is admirably arranged, or extemporize one for ourselves at the residences of our patients. Fortunately, it is not difficult in most houses to arrange an efficient douche-bath for the knees and

ankles—the parts to which this description of bath is specially applicable. All that is required is a large tap, communicating with a cistern of water placed at a considerable elevation above it. Two yards of India-rubber tubing affixed to the tap will suffice to carry the stream of water towards the affected joint, and a large, empty bath will receive it as it flows. You may think this a trivial matter for me to dilate upon, but if you are really in earnest at your work, and are aiming at the attainment of proficiency in relieving human suffering, you will not despise the smallest matters which can contribute towards the object you have in view.—*Lancet, Sept.* 26, 1863, *p.* 355.

NEW DISEASE.

The addition of a new disease to the already enormous catalogue of the ills to which flesh is heir, can hardly prove a source of congratulation, the more especially if it happened to be one of the most loathsome which has yet been made known or conceived. But in calling attention to the newly-recognised "trichina disease," we have at least the satisfaction of knowing that we have here not a malady absolutely new, but only possessing features of novelty in so far as by the recognition of its singular and painful cause we have made a great step towards ensuring its prevention; for this is one of the diseases which is to be averted rather than cured.

The trichina disease is a febrile disorder depending upon the lodgment and migrations in the human body of multitudes of a microscopic worm (Trichina spiralis), which find their way into the economy through the eating of pork infested with the parasite, and pass in crowds from the intestines to the muscles, where they become encapsuled.

The history of this worm, its migration, and the disease it causes, is a marvelous chapter, yet very imperfectly known, in vital philosophy. The disease is one of which the reality and the serious importance cannot be contested. Müller, a German physician sends us in an original paper, which we publish in another column, a most careful observation of the symptoms of the disease, watched by him in a recent *epidemic* of the trichina fever in Hettstaedt, a small town in Prussia containing about 6000 inhabitants, which commenced in the middle of October last, in consequence of the infected persons having eaten a kind of sausage (not thoroughly cooked), made of pork in which were tri-

chinæ. Some account of this epidemic has already appeared in several of the public journals, and it has necessarily created a profound impression: for in this small population eighteen to twenty persons had died from the disease, and more than eighty persons were at one period afflicted with the same malady, produced by the same cause.

The evidence of the nature of the disease is of the most positive and irresistible kind. In all the cases examined, the worm is found by microscopic examination in immence numbers in the muscles inspected, whether the examination be made by *harpooning* small portions of muscle during life—when a piece of living muscle the size of a hemp-seed has been found to contain no less than seven trichinæ—or by the *post mortem* examination of the muscles, which discovers everywere numbers of these pernicious worms. The symptoms of the disease are well marked. In this most recent outbreak at Hettstaedt, they are thus described by our contributor, Dr. Müller:—

"According to the information I obtained on the spot, the disease begins, a few days after eating the meat in which there were trichinæ, with loss of appetite, and almost without exception with diarrhœa and fever; œdema of the eyelids; also pain, or at least painful sensation of weakness in the limbs; œdema of the joints; difficulty in moving the tongue; profuse clammy prespiration; and those patients who do not become convalescent, die either unconscious with symptoms of typhus fever, or in a few cases, remain conscious to the end, complaining of inability to breathe freely.

"The only important symptom of typhus absent in the disease is the enlargement of the spleen, and it is very probable that some of the so-called epidemics of typhus fever in former days were caused by the propagation of trichinæ in the human body."

Similar symptoms were observed and described in an outbreak at Planen in Saxony, where from twenty-five to thirty persons were affected; and at Madgeburg, where the disease is said to have prevailed during five summers, but at first not to have been recognised. A symptom on which other observers than Dr. Müller have laid much stress, but to which he does not allude, is excessive and singular muscular pain, generally through the body, but especially in the calves of the legs, which become hard and swollen. This was so noticeable at Madgeburg that the disease was called Scleroma adultorum. In a very remarkable case recorded by Dr. Friedreich, of Heidelberg, where there were these excessive muscular pains, and the calves of the legs are described as being "hard and elastic, with a feel almost of in-

dia-rubber," the disease was diagnosed during life. The patient, who was treated with picro-nitrate of potash, slowly recovered.

"The muscles (calves of the legs) were harpooned several times. The first time was about twenty or twenty-one days after the commencement of the attack: although a piece of muscle only about the size of a hemp-seed was taken out, on less than seven trichinæ were found. Ten days later other harpooning showed no trichinæ; but seven days after, a living, but not encapsuled, trichina was found; and four days after this an encapsuled worm was discovered. Seventeen days later, when the patient was quite well, the search for trichinæ was fruitless. The muscular fibres were not inflamed, but were fattily degenerating rapidly. A very extraordinary discovery was that a trichina was found in the pus of one of the boils, so that Friedreich asserts that the furunculoid disease was caused also by a wandering of the worm beyond its usual site. The patient had been engaged in killing pigs the week before his illness, and had often held his bloody knife in his mouth, and had also eaten raw some of the bits intended for sausages."

We might be well satisfied to take comfort from the observation that these terrible records are from German sources, and that the sausage-eating propensities of the German may perhaps explain how they suffer from a parasitic disease non-existent here. There are, however, some important facts bearing upon that view of the case which cannot be safely disregarded. In the first place, the Trichina spiralis was originally discovered in the human body in 1835, by a distinguished English observer (Professor Owen) in a specimen of human muscle submitted to him by Mr. Paget, then a very young man. Hilton and Wormald had previously noticed a speckled condition of the muscles in some subjects, and it was this that Owen made out in 1835 to be due to "white specks in the muscles, and seem to be cysts of an elliptical figure, with the extremities in a general attenuated, elongated, or more opaque than the body (or intermediate part) of the cyst, which is in general sufficiently transparent to show that it contains a minute coiled-up worm." Professor Owen gives, in the paper communicated to the Zoological Society of London, from which this extract is taken, a very complete description of this worm, to which, however, Henle, Virchow, Leuckart, Luschka, and Kuchenmeister have added further details. They have especially traced its life-history, and their researches show that "the fully-developed trichina is a distinct filiform worm, occupying the alimentary canal, and giving birth to young trichinæ, which pierce the walls of the intestines, and on reaching the muscles become capsulated."

The evidence that the Trichina spiralis is bred in man by his feeding on pork infested with this parasite is of the most positive and direct character. Professor Gamgee, in his recent article on Diseased Pork and Microscopic Parasites in man, in the *Popular Science Review*, gives a useful picture of the symptoms of the disease in animals, to which all may refer with advantage; for it is by recognising the disease with care in animals which are materials for human food that danger to man will be best avoided. He dwells with force and propriety on the necessity of scrutinizing the habits of the domestic pig. He points out that parasitic maladies in the pig specially abound in Ireland, where swine live most amongst human beings; and draws inferences of practical importance to feeders and to all who eat pork.

It is a remarkable fact that we get from eating pork the two other most destructive parasites which prey upon the human body—the tapeworm and the hydatid. Leuckart has shown, and it is now acknowledged, that trichinæ are not killed by salting or freezing pork, nor by its becoming putrid. Whether smoking kills them is not settled, but the imperfect smoking to which a great part of the preparations of pork are subjected certainly has not sufficed to destroy them. The observations of Wormald, Hilton, Paget, Bellingham, and others show that this disease—not looked for, because almost unknown to us during life as a disease—certainly exists amongst us. It resembles so much "continued fever" in its simple characters that it may well be passed over by those who are not on the watch; but the recent observations of epidemics to which we have alluded, and the paper which we publish to-day from the pen of Dr. Müller, will put the profession on the alert; and it is to be earnestly hoped that, if it exist anywhere, it may now be immedately discovered, and the most rigid measures enforced of sanitary prevention.—*London Lancet.*

ON IODINE AS A DEODORISER AND DISINFECTANT.

By Dr. B. W. Richardson, M.A., London.

The following is from a report of papers read at the late meeting of the British Association at Newcastle:—

Dr. Richardson made a short observation in sub-Section D on Thursday, August 27, "On the Application of Iodine for Disinfecting and Deodorizing Purposes." The iodine should be

placed in a common chip-box, such as is employed by pharmaceutists, the lid of the box being replaced by a covering of "leno," or the iodine may be placed in the ornamental vases on the mantel-shelf of a room. The smell of iodine could thus be communicated to the air of an apartment, and air so purified was not only fresh and agreeable to the sense of smell, but any organic matters present in it were destroyed. In extreme cases the iodine should be placed on a dish or plate, and the heat of a candle being applied beneath, the iodine was volatilized, and a room was quickly purified. Dr. Richardson said that in cases of small-pox a knowledge of the facts he had named was most valuable. In rooms occupied by sufferers from this painful disease, organic matters floated largely in the air, rendering the air most offensive. He (Dr. Richardson) had succeeded, in all cases, in rendering such air inodorous by the volatilization of iodine. He had also observed the singular fact, that when the air was greatly charged with organic materials, the smell of the iodine was for a long time imperceptible, so that in truth the iodine method of purification was also a ready and practical test of the purity of an air. Dr. Richardson thought the iodine plan was quite as effective as the liberation of free ozone—it was, indeed, in principle the same, and was so simple that every person could employ it.

Dr. Wood said that the iodine produced the effects named by Dr. Richardson in one of two ways—it either destroyed the organic compounds by combining with hydrogen, and forming hydriodic acid, or it might be that in the chemical changes which occurred ozone was formed. In either case there was unquestionably a rapid and effective process of oxidation, the results being the same as occurred with chlorine to a considerable extent, and in a manner more easy and manageable.—*Medical Times and Gazette, Sept.* 26, 1863, *p.* 334.

MERCURY AS A REMEDY.

LETTER FROM THOMAS POPE, ESQ.

SIR,—The homœopathist and the proscriber of mercury are in a pitable state; and woe to their victims. As with the former, so is it with the latter; many of those professing their craft publicly, like those following in their wake, recreants as they are, courting popularity, secretly belie themselves.

What may we infer from the remark of a gentleman who lately, at the Harveian Society, boasted that for several years past he had never used mercury internally? If mercury in the system be always deleterious, then I should say, the sooner such a notion be exploded, the better; for I am bold to say that I look upon mercury as an internal and external agent of more value to the medical man, in his treatment of disease, than, I had well-nigh said, all the other articles of the materia medica conjoined. Give me this, and air, food, sleep, excretions, exercise, and the passions, and I think I could do my patients more good without any of the other articles, valuable as they are.

Murcury, like arsenic and other poisonous articles of the materia medica, requires the greatest caution in its use. Who would give it in cases where the crasis of the blood is in a dissolved state, or in organic disease, particularly of the liver and heart? Or who would venture on large doses without first knowing whether idiosyncrasy existed in the individual? We know there are some few who cannot tolerate it at all, and others to whom we can hardly give enough, and, between these two states, gradual steps; therefore we see the great advantage of a knowledge of the constitution, not only of a tolerance of this, but of the others. Much may be said in the praise of this mineral, and some I have said in this JOURNAL; and I believe I can safely say that I had never cause to regret its use. I will, however, conclude with its advantage in infantile syphilis. I know four grandfathers whom I treated, before they were a month old, with a grain of blue pill daily for about two months; they have healthy progenies. For about sixty years up to the present time, I have never been long without patients of this description, male or female; so that I am not in the same predicament as the Irish candidate mentioned in our JOURNAL of the 23d ult., (page 110); and but for its use, most of them would have fallen sacrifices like the thousands of others without this specific, or would have lingered and died miserably at different periods of life; and if after marriage and progeny, what horrors ensue! I am, etc., THOMAS POPE.

Cleobury Mortimer, February 8th, 1864.

UNIVERSITY OF LONDON.—Her Majesty has nominated the Right Hon. Edward Cardwell, M.P., and Dr. William Sharpey, secretary to the Royal Society, to be members of the Senate of the University of London.

Book Notices.

Transactions of the American Medical Association, Vol. XIV. 1864.

This is a handsomely printed and bound volume of 416 pages; containing the Record of Proceedings; the Address of the President; the Report on Medical Education, by C. C. Cox, M.D., of Maryland; the Report on Medical Literature, by Charles A. Lee, M.D., of New York; a paper on Diatheses: their Surgical Relations and Effects, by E. Andrews, M.D., of Chicago; a paper on the American Method of Treating Joint Diseases and Deformities, by Henry G. Davis, M.D., of New York; Cases of Diarrhœa Adiposa, by John H. Griscom, M.D., of New York; a Report on American Necrology, by C. C. Cox, M.D., of Maryland; a Prize Essay on the Physiological and Medicinal Properties of the Veratrim Veride, &c., by Samuel R. Percy, M.D., of New York; a paper on Laryngoscopal Therapy, &c., &c., by Louis Elsberg, A.M., M.D., of New York; the Constitution and Code of Ethics of the Association, with the List of Officers and Permanent Members. The volume, though not a large as some of its predecessors, contains much matter of very great interest to the Profession. The Prize Essay on Veratrum Viride is, alone, worth twice the cost of the whole book. It is a model paper, and might be read with profit by every practitioner. Our present purpose, however, is simply to announce the publication and enumerate the contents of the work. It is supplied to all members of the Association who have paid the Annual Assessment for the year 1863; and other members of the profession may procure it by forwarding *three dollars* to the Treasurer, Dr. Caspar Wister, of Philadelphia.

A Treatise on Human Physiology: Designed for the Use of Students and Practitioners of Medicine. By John C. Dalton, Jr., M.D., Prof. of Physiology and Microscopic Anatomy in the College of Physicians and Surgeons, New York; Member of the New York Academy of Medicine; of the New York Pathological Society; of the American Academy of Arts and Sciences, Boston, Mass.; and of the Biological Department of the Academy of Natural

Sciences, of Philadelphia. Third Edition, revised and enlarged. With Two Hundred and Seventy-three Illustrations.

The fact that a third edition of this work has been called for in so short a time, shows that it is already well known, and its merits appreciated by the profession.

It is one of the most concise and valuable works on human physiology in the English language. It is published in the best style of Blanchard & Lea, of Philadelphia; and for sale by W. B. KEEN, 148 Lake Street, Chicago.

LECTURES ON ORTHOPÆDIC Surgery. Delivered at the Brooklyn Medical and Surgical Institute, with numerous Illustrations. By LOUIS BAUER, M.D., M.R.C.S., Eng.; Prof. of Anatomy and Clinical Surgery; Licentiate of the New York State Medical Society; Member of the New York Pathological Society; of the American Medical Association; Corresponding Fellow of the London Medical Society; Health Officer of the City of Brooklyn, &c. Reprinted from the Philadelphia Medical and Surgical Reporter. Philadelphia: LINDSAY & BLAKISTON. 1864.

This is a monograph of 108 large, double column pages, written in the style of lectures. It is well illustrated by cuts showing the various deformities and the apparatus required in their treatment. The practical surgeon will find it an interesting and valuable work. For sale by S. C. GRIGGS & Co., booksellers, Lake Street, Chicago.

A CASE OF NEUROMA OF THE OPTIC NERVE, WITH REMARKS AND ILLUSTRATIONS. By JOHN A. LIDELL, M.D., Surg. U.S. Vol., Prof. of Anatomy in the National Medical College. Second Edition. New York, 1863.

This pamphlet of fifteen pages contains an account of a very interesting case of neuroma of the optic nerve; a tumor which had so developed itself as to crowd the eye forward and downward until it was destroyed, and the tumor occupied the whole orbit. Such cases are very rare, and still more rare that they are reported by so able an anatomist as Dr. Lidell.

ANNUAL REPORT OF THE COMMISSIONERS, SUPERINTENDENT, AND TREASURER OF THE INDIANA HOSPITAL FOR THE INSANE; FOR THE YEAR 31ST, 1663.

TWENTY-FIRST ANNUAL REPORT OF THE MANAGERS OF THE STATE LUNATIC ASYLUM, FOR THE YEAR 1863. Utica, New York.

To those interested in the statistics and treatment of mental maladies the above annual reports are of much interest and value; especially the last named, which relates to one of the oldest and largest institutions for the treatment of the insane in our country.

Editorial.

Death of Dr. O. L. Leonard.—At the meeting of the Chicago Medical Society, on Friday, April 1st, the following resolutions were adopted:—

Whereas, in the order of Divine Providence, our friend and colleague, Dr. O. L. Leonard, has been called from our midst.

Resolved, That, while deploring his death, as the loss of a Christian gentleman and a kind and faithful fellow laborer, we bow with humility before the will of Him who is alike infinite in wisdom and beneficence.

Resolved, That we recognized in our departed brother those honorable and noble qualities of mind and heart that endeared him alike to his family, his patients, and his confreres.

Resolved, That we hereby tender our heartfelt sympathies to the family of our deceased associate.

Resolved, That the Secretary of this Society be directed to present a copy of these Resolutions to the relatives of the deceased, and to request their publication in the medical journals and newspapers in this city.

E. MARGUERAT, M.D., *Secretary.*

Chicago Medical Society.—The annual meeting of this Society was held in the Society's Room, in the Court House, on Friday evening, April 1, 1864. There was a full attendance of members, and the election of officers was conducted in a spirited and harmonious manner. The meetings of the Society have been better attended all the past year than at any previous time, and there are gratifying indications of increased ac-

tivity and usefulness in the future. The following officers were chosen for the ensuing year:—

President, ...M. O. Heydock, M.D.
Vice-President, ...Thos. Bevan, M.D.
Secretary and Treasurer, E. Marguerat, M.D.

Delegates to the State Medical Society. Drs. A. Fisher, J. Bartlett, and Ira Hatch.

Delegates to the American Medical Association. Drs. C. G. Smith, M. O. Heydock, and A. Fisher.

The announcement of the Standing Committee on the Sanitary Condition of the City was deferred until the next meeting.

Annual Meeting of the Illinois State Medical Society. The annual meeting of this Society will be held in the Common Council Room, in Chicago, commencing at 10 o'clock A.M., of Tuesday, May 5th.

The following is a list of the *Chairmen* of Committee who are expected to report at the said meeting. We hope none of them will report absent or unprepared:—

On Practical Medicine, Dr. N. S. Davis, of Chicago.

On Drugs and Medicines, Dr. F. R. Bailey, formerly of Joliet.

On Obstetrics, &c., Dr. DeLaskie Miller, of Chicago.

On Surgery, Dr. E. Andrews, of Chicago.

On Orthopœdic Surgery, Dr. Prince, of Jacksonville.

On the Delaterious Effects of the Use of Tobacco upon the Human System, &c., &c., Dr. N. S. Davis, of Chicago.

The People's Dental Journal.—The number of this valuable journal for April, comes to us with two new names added to the list of its editors. It is now edited by W. W. Allport, D.D.S., of Chicago; A. Hill, D.D.S., of Norwalk, Ct.; and J. Richardson, D.D.S., of Terre Haute, Ind.

The contents of the present number are interesting and valuable to all classes of readers.

Acknowledgment.—The Chicago Medical College having established a reading room and library, with the view of culti-

vating among its students a habit of familiarity with professional literature, a considerable number of the best medical journals of the country have been contributed by their conductors to the advancement of this object. I wish, in behalf of the reading room, to return them thanks for their liberality.

The following journals have been thus received:—

The American Medical Times,
The Boston Medical and Surgical Journal,
The Canada Lancet,
The Dental Cosmos,
The London Lancet,
The Medical and Surgical Reporter,
The Medical Examiner,
The Medical News and Library,
The People's Dental Journal,
The St. Louis Medical and Surgical Journal.

E. ANDREWS, M.D.,
Librarian of Chicago Medical College.

PHILADELPHIA, *March* 1, 1864.

Dear Sir:—The Transactions of the American Medical Association, Vol. XIV., are published, and now ready for delivery.

Should you desire a copy, please remit three dollars to my address.

As there are various methods by which the volume may be sent, inform me which you prefer. If by mail, please forward thirty-two cents in post-office stamps, that your postage may be prepaid. Very respectfully, CASPAR WISTER,

Treasurer American Medical Association.
No. 1303 Arch Street.

The following volumes are for sale:—

Proceedings of the Meeting of Organization, 50 cents.

(Vols. I., II., III., IV., and VI. are out of print.)

Vols. V., VII., VIII., and IX., *if taken collectively*, $5, for the set. If singly, $2 apiece.

Vols. X., XI., and XII. at $2 each.

Vols. XIII. and XIV. at $3 each.

THE RELATIONS OF HEIGHT AND WEIGHT IN THE HUMAN BODY.

In the Statistical Society's Journal, of March last, a very interesting table is given, showing the growth of the human body from 18 up to 30 years of age, indicated by weight and height.

The averages were taken from upwards of 4,800 observations at all ages. Thus a lad of 18, if he be 5f. 4in. in height, speaking in round numbers, ought also to weigh somewhere about 8st. 10lbs. Given the age of 21, and the height 5ft. 5in., he should weigh 9st. 5lbs. Ascending still further, and assuming the age to be 25, and the height 5ft. 6in., the weight would be 10st. 5lbs., and at 30 years of age, with a height of 5ft. 6in., we ought to have the result 10st. 11lb. In fact so clear and demonstrable is this "law of increase in the growth of man," as determined by very extensive measurements taken at different times by scientific gentlemen, that we can almost work, as it were, in a rule of three sum, any one condition we like. Taking the converse of what we have already exhibited, we may say that if a lad of 19 weighs 9st. 4lbs., he ought to measure 5ft. 4in. and a little more; if at 22, 9st. 12lbs., he should be 5ft. 6in. in height, and so on.—*British Med. Journal, April* 25, 1863, *p.* 438.

Use and Abuse of Stimulants in Fever—Occasional Antiphlogistic Treatment.—A few days ago we saw at Guy's several patients convalescent from fever. In reference to them, Dr. Wilks remarked on the treatment of fever by stimulants. A young man, who had had typhus fever, and who had been covered with the ordinary mulberry rash, had recovered without any. As there appeared no need to give any, Dr. Wilks wished to prove to his class that alcohol was not always necessary in fever, and that he did not by any means consider alcohol as an antidote to fever, for he found the disease always ran its course under every form of treatment. He considered the rule laid down by many of the older physicians to be the correct one with regard to the treatment of all fevers; that in very many cases supervision was alone required, and that in others a stimulant plan was necessary; the only question being the quantity of alcohol required and the time when it was needed. He thought, therefore, that those who spoke of their success by the universal treatment by alcohol in all cases of fever, were adopting (to say the least) a very unscientific method, which was, in reality, one founded on such a reasoning as this: That severe

cases of fever are benefited by alcohol, and mild ones are not killed by it, and, therefore, it is safer to give it to all. The same may be said of those who declare carbonate of ammonia to be *the remedy* for all cases of scarlatina. It is, no doubt, of great value in severe cases, and in mild ones it certainly will not kill the patient. Dr. Wilks would not say, however, that wine and spirits did no harm, for in some cases he believed they were decidedly injurious, especially in young persons with typhus fever and violent delirium. He had such a case under his care, in which he ordered cupping to the back of the neck, and which was followed by quiet and sleep. He was a total disbeliever in the change of type theory; for such a case as this, and two others which he had seen bled, and yet did well, entirely refuted such an opinion. Although he believed the present plan of treatment by support saved more lives, he was quite sure, that if no stimulants were given, and that if the patients were bled, the greater number would recover as heretofore.—*Med. Times & Gaz.*

Treatment of Dysentery by large Doses of Ipecacuanha.—This plan of treatment was introduced, or brought prominently forward, by Dr. Docker, of Mauritius. The use of ipecacuanha in dysentery is by no means novel; but the employment of such large doses, and in the method described, is (Dr. Hillier said) of comparatively recent date. The plan is to give a drachm of tincture of opium, to apply a mustard plaster over the epigastrium, and, in twenty minutes, to give a drachm or a drachm and a half of powdered ipecacuanha in a very small quantity of peppermint water, or simple water. Sometimes half an ounce or an ounce of castor oil is given, with half a drachm of laudanum, before beginning the special treatment; this is however, usually found to be unnecessary. Vomiting is not often induced, and the cure is often immediate. A patient may be passing, every half hour or oftener, blood and mucus, or bloody serum with pus. They cease at once for about twenty-four hours; he then has a natural stool, and is well. The diet is farinaceous.

In May, 1862, Mr. Baylis, of Ceylon, wrote to Dr. Hillier that he had treated fifty or sixty cases in this way, and only lost three, who were in articulo mortis when they came under his care.

Dr. Hillier has had the opportunity of trying this mode of treatment at the Children's Hospital. It was in the case of a child, aged 4 years, suffering from sub-acute dysentery contracted in Barbadoes. He gave five minims of laudanum, and, in

half an hour, fifteen grains of powdered ipecacuanha. There was no nausea or any unpleasant symptom caused by the medicine; and although the patient had previously passed five or six motions, containing much blood and mucus, every twenty-four hours, there was no evacuation for thirty-six hours. He then passed an ordinary feculent motion, and from that time he continued quite well. It is stated that ipecacuanha has the effect of rapidly healing large dysenteric ulcers. Dr. Hillier suggested that it might be worth while to try it in the diarrhœa dependent on tubercular ulceration, or in typhoid fever. The opium is supposed to act mainly in preventing vomiting, but it may, with ipecacuanha, have a more specific action on the disease.—*Ibid.*

Extraordinary Longevity.—Some rare instances of prolonged life have been lately presented in the obituary of *The Times*. In a recent number, the deaths of five gentlemen and three ladies are recorded, whose united ages amounted to 681, giving an average of upwards of 85 years to each. The eldest was a gentleman aged 102; the youngest, also of the same sex, was 80; the eldest lady was 87, and the youngest 82. Again, on the 19th inst., appears, amongst many others, ten whose united ages amounted to 862 years, the eldest being a lady aged 98, and the youngest, of the same sex, being 80 years of age; the eldest gentleman was 91, and the youngest 82. The same paper also gives a short notice of a lady who lived in a state of celibacy until the age of 60, when she married, and lived 47 years afterwards, having reached the extraordinary age of 107 years. On adding this lady's age to the 862, we have a grand total of 960, or an average of 88 years for each person. The following day (the 20th inst.) there appeared also eight ladies and one gentleman representing a total of 789 years—the fair sex, as usual, taking the lead, the eldest having reached 98 years, and the youngest 82; the gentleman was 83. The average age of this group would be 87 years and 8 months. *The Times* of the 21st, announced, amongst others, eight persons whose united ages amounted to 675, giving an average of 84 years and 4 months to each individual; the eldest was 93 and the youngest 80 years of age. Some curious and interesting mortality statistics could be compiled from the obituary of *The Times*.

M. Velpeau at the Academy of Sciences of Paris.—This eminent surgeon has just vacated the President's chair of this

Academy, and it redounds in no small degree to the honor of the profession that such an eminent post has been held and so worthily occupied by M. Velpeau. It reminds us of Sir B. Brodie presiding at the Royal Society. Our readers are aware that the Academy consists of numerous sections, the members of which are eminent in the different branches of science. Among these branches there is of course one for Medicine and Surgery, and the attainment of a membership in this section is the highest point towards which the imagination of French physicians and surgeons is wont to soar. M. Velpeau delivered, before leaving the chair, a most appropriate and touching speech, in which he especially dwelt on the fact of having started from the humble ranks of life, and having at last obtained the envied honor of presiding, for one year, over the Academy of Sciences of Paris.

The British Pharmacopœia.—In forming an opinion of the merits of this work, it is impossible to forget that the book has now been more than four years in preparation, and that it has cost a sum variously stated at £6000 or £8000. We have no interest in depreciating the value of literary and laboratory work, but we have no hesitation in asserting that, the work could have been as well prepared in less than twelve months by any moderately accomplished chemist and pharmaceutist, who would have thought himself richly rewarded with £400 or £500. No doubt the contentions between the three colleges about their rival preparations were frequent and severe; no doubt, the debates on such questions, as whether iodine should be called iodum or iodinium, and whether pil. galbani co. should, for the future, be known as pil. assafœtidæ co. or not, were long and fierce. We, however, have only to judge of the results. Although the book has been all these years in preparation, it bears evident marks of having been put together in a hurry. Some of the directions are incomplete and faulty. The bulk of the work is mere compilation. Much of it is taken up with prescriptions such as medical men should be left to write at their discretion; *e. g.*, mist. creasoti, mist. scammoni, pil. plumbi c. opio. The chemistry does not fairly represent the science of the day. Taken altogether, the book, as the production of the collective wisdom of the Medical Council, is far from likely to increase the respect which that learned body has inspired.—*Chemical News.*

Infantile Mortality in New York City.—From the ela-

borate statistical tables prepared by Dr. Cyrus Ramsay, Registrar of Records and Statistics for the City of New York, we learn that a steady improvement has been going on in that city for the past ten years, in regard to the mortality of children. This is shown in the fact, that the number of deaths of children each year, since 1851, has remained nearly the same or even smaller (except during the cholera year, 1854), while the population has rapidly increased, and during the time mentioned has actually doubled. The number of deaths of children under one year, as recorded by Dr. R., was as follows:—In 1851, 6891; in 1852, 6351; in 1853, 6661; in 1854, 7551; in 1855, 6771; in 1856, 6437; in 1857, 6405; in 1858, 7109; in 1859, 6599; in 1860, 6087; in 1861, 6189; in 1862, 5720; in 1863, 6118. The number of deaths of adults recorded in 1851, was 7775; and in 1863, 10,596. The deaths of adults and children of all ages was, in 1851, 21,748; and in 1863, 25,196.

Action for Alleged Illegal Detention in an Asylum. —An action for damages for "wrongous and illegal detention," in Saughton Hall Lunatic Asylum, has been occupying the attention of the Scotch Courts. The defenders in the action are Drs. Smith and Lowe, owners of the asylum, in which Angus Macintosh, Esq., was confined for about six weeks, in the summer of 1852, under a warrant of one of the sheriff-substitutes of Edinburgh, granted on a certificate of two doctors, that he was of unsound mind. Two or three years ago, he had another action of damages against these doctors, who signed the certificate, and in that action he was unsuccessful, the jury finding, in point of fact, that he was insane when the certificate was granted. He tried to obtain a new trial and failed, and has brought this action to have the privilege of telling his own story to the jury. And he did tell it very well, and was a most amusing and clever witness, giving his evidence in a frank, nonchalant, gentlemanly way, expressing himself elegantly, and dexterously avoiding awkward admissions. He remembered all his mad-like pranks, had reasons for them all, and ascribed all his extravagances to a three months' spree in London. After a lengthy and able summing up by the judge, the jury, after an absence of three hours, returned a verdict for the defendants, by a majority of nine to three.—*British Medical Journal.*

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ARTICLE XIX.

REPORT ON VACCINATION.

By SWAYNE WICKERSHAM, M.D., Chicago, Ill.

Communicated to the Chicago Medical Society.

Mr. President and Gentlemen:—Your Committee, to whom was referred the subject of vaccination, having had the same under careful consideration, beg leave to submit the following report:—

In order to duly appreciate the great boon conferred upon the human family by the introduction of vaccination, we must bear in remembrance the great ravages of small-pox previous to the discovery of the preventive.

It is deemed proper to incorporate in this report a very brief history of variola. The period at which small-pox was first observed, is not definitely known. It may have been coincident with the birth of man. It may not have appeared until long after the origin of the human race. That it was of very ancient origin, we have an abundance of historical testimony. I believe there is no recorded history which warrants us in saying that it has had a longer existence in any part of the world than in India and China, where their histories claim that it has prevailed from time immemorial. It is said to have shown itself in Arabia about the time of the birth of Mohammed, and to

have subsequently invaded Syria, Egypt, and Southern Europe, with the armies of his successors.

We are destitute of any satisfactory proof that it was known to either the ancient Greeks or Romans. The mortality from the disease, always great, was at times terrible. Nothing so positively demonstrates the progress of medical science as to compare the means at our disposal to check its ravages, with those at the command of physicians, previous to the discovery of vaccination, by the immortal Jenner. So large a proportion of the cases of small-pox in our day present themselves in a modified form, occurring in persons who have at a former period been vaccinated, that the average mortality has been greatly reduced. We also believe that improved methods of treatment have been productive of similar though less marked results.

To such an extent have the horrors of variola been mitigated, that the public are exhibiting signs of apathy, and are to a considerable degree neglecting to avail themselves of those means, which alone have stripped small-pox, of those terrible consequences which formerly attended it. We propose to insert some mortuary statistics in order to illustrate the natural history of the disease, in communities where, or in persons in whom, it has not been influenced or modified by previous vaccination.

Prof. Hewitt, of London, associated with the St. Mary's Hospital Medical School, says that, out of every 100 persons attacked, about 35 die.

In the case of children under five years of age, out of every 100 attacked, 50 will die. From the age of five to ten, out of every 100 attacked, 27 will die; from ten to fifteen, 23 will die; from fifteen to twenty, 26 will die; from twenty to twenty-five, 40 will die; from twenty-five to thirty, 45 per cent. will die; from thirty to thirty-five, 57 per cent.; from forty to sixty, 69 per cent.; and between sixty and ninety, the mortality is 75 per cent. It will be observed that the mortality is the largest among the very young and old. Of 2,654 patients admitted, during sixteen years, into the London Small-pox Hospital, affected with the disease and unvaccinated, 996 died, which is 37 per cent.

In Sweden, in the twenty-eight years before the introduction of vaccination, the deaths from small-pox were 2,050 per annum for every million of the population. Forty years afterwards, they were but 158 per annum for every million of the people. In Westphalia, between 1776 and 1780, the death-rate from small-pox was 2,643 per annum for every million inhabitants; but, after vaccination was well established, it was but 114. In Copenhagen, for the last fifty years of the last century, the deaths were 3,128 per annum for every million of persons; but the first fifty years of the current century gave but 286 per annum for the same number of the population.

The above mortality is almost inconceivable, yet nevertheless true. The modified form of the disease is attended with much less mortality, the per centage depending upon the goodness and efficiency of the vaccination. The above statistical observations do not fully demonstrate the deplorable consequences of the malady. A very large number of those who are permitted to recover, do so at the expense of beauty and former health. Not only does small-pox kill its 35 per cent. of those whom it attacks, but the disfigurement by scars, loss of vision, permanently shattered health, make the disease doubly unwelcome.

Many a maiden, formerly noted for her beauty,—many a manly youth, formerly full of ambition, industry, and talent, accustomed to indulge in high aspirations,—arises from a bed of small-pox to behold themselves again, not as formerly, but now possessed for all the future, of hideous and repulsive countenances. In many instances, such unfortunates have yearned for death, and sought and obtained the grave of a suicide. In consideration of the above, it is not wonderful that physicians from an early period exercised their ingenuity to obtain some means by which they would be enabled to ameliorate the consequences of the disease. But little progress was made in that direction until the discovery of inoculation. When, where, and by whom inoculation was first performed, is involved in much obscurity, and perhaps will never be positively ascertained.

As a means of rendering small-pox milder and more tract-

able, the inoculation of the disease was practiced for a long period by some of the nations of Asia, before its benefits were known to Europeans. It was practiced in Constantinople about 1700; it was introduced into England early in the year 1721, by the celebrated Lady Mary Wortley Montague, whose husband had been an English ambassador at Constantinople. In June, 1721, it was introduced into America by the Rev. Cotton Mather, under the direction of Dr. Boylston, of Boston. It was performed in different ways, but mostly in a manner similar to that to which we resort in performing vaccination. It was unquestionably, after a brief period had elapsed, regarded with much favor. It succeeded in disarming the disease of some of its most frightful features, and sensibly diminished its mortality; but its benefits were not unadulterated, notwithstanding its advantages outweighed its disadvantages: there were objections to its use. It would probably do good—possibly harm. It multiplied the *foci* of contagion; had, in consequence, a tendency to perpetuate small-pox and cause it to frequently prevail as an epidemic, while previously long intervals often elapsed during its absence. Occasionally death resulted, although Gregory says that, if carefully managed, not more than one death would occur in five hundred cases. We believe this estimate too small.

Happily Jenner comes to our aid in 1798, and, by his invaluable discovery, renders entirely unnecessary the further performance of the operation. Subsequent to Jenner's discovery, laws were passed in many of the American States, prohibiting inoculation. Pennsylvania passed such a law in 1811, attaching a heavy penalty for its violation. It was also prohibited by law in Great Britain, though we believe not until the year 1840. Asia and Africa, the most ancient seats of small-pox, still avail themselves of this mode of palliation.

We would not have said even thus much about inoculation had it not have been for an effort that had been made by an eminent physician and scholar to revive it. I allude to Prof. Dickson, of Philadelphia, who occupies the Chair of Practice of Medicine in the Jefferson College. In the July number of

the American Medical Journal for 1862, he publishes a very able article in advocacy of its revival. It seems that he was induced to publish such a recommendation from the facts embraced in the annual report on Meteorology and Epidemics for 1861, read by Dr. Jewell to the Philadelphia College of Physicians. There was, during a part of the year 1861, a general prevalence of the exanthemata in Philadelphia, resulting in a very heavy mortality, especially from small-pox. There died in that city, during the year 1861, 758 persons from small-pox, which was twice as great a number as had died in any year except 1852, during the current century.

He seems to have entertained the idea that vaccination was a partial failure, and the deficiency should be supplied by inoculation. He says "we cannot avoid being shocked at this retrograde exhibition and shrinking from the acknowledgment of professional failure and defeat which it seems to imply." He recommends a combination of the two, "inoculation, superimposed upon vaccination." Prof. Dickson could not have had in his mind Doctor Woodville's evidence, given before a commission appointed by the British Parliament to inquire into the subject in 1802, who says "that within the two years, 1799 to 1801, 7,500 persons were vaccinated at the Small-pox Hospital, of whom about one-half were subsequently inoculated with small-pox matter, and in none of them did small-pox produce any effect. Though no doubt the result would have been different had the inoculation been deferred for some years. We know of no experiments of this nature that have been performed recently, except those of Dr. Darrach, of Philadelphia, who inoculated three of his children with small-pox matter who had been vaccinated in infancy. The children were aged 12, 13, and 14. In two there was a slight local affection, without any fever or eruption. In the third case, there was local affection without fever, but with papular eruption on the seventh day, not advancing to vesicles.

As this subject is one of such vast importance, we will allow the eminent Professor to speak for himself. He says, "Indeed, so much are the violence, the suffering, and the proportional

mortality of small-pox diminished by inoculation, that I would advocate unhesitatingly the propriety of universal inoculation at as early a period of life as was ascertained by repeated experiment to be safe and allowable. I would have such inoculations repeated at short intervals, until in every subject the point of absolute incapacity to receive the affection was fairly reached. This would happen in the majority of instances with the first efficient insertion of the virus. Those who had gone through this process would be proof for the future against the pestilence; and, as to them, it would be annihilated—virtually exterminated. And as all constitutional peculiarities are hereditarily transmitted, whether of original organization or in any way acquired, so this antiproclivity or acquired immunity would go down increasing in force with every generation, until the whole race would become insusceptible of this horrid mode of dying. Let us procure that it shall be ordained that every child shall undergo vaccination by some expert within a month after birth; that, as soon as the constitution shall have gone through its influence, inoculation with variolus matter shall be performed, and repeated at brief intervals."

We regard all this, although uttered by an experienced and erudite man, as mere utopian speculation. It would be almost impossible to carry into effect such a plan, even though it were advisable. Neither is it proven that persons so treated would be any more thoroughly protected than those who would have performed upon them the same number of vaccination repetitions. We had under our care this winter quite a severe case of varioloid in a woman who had in youth-time been inoculated. She insisted, previous to the attack, that she was safe, although hourly exposed to the infection of variola. In Davy's tables, 97 are set down as having had small-pox previously. He mentions as authentic the case of a woman, mother of ten children, who had small-pox eleven times! first in infancy, and afterwards when each of her children had it, and the last attack as severe as the first. If medical testimony can be relied upon, there have been many similar instances. No intelligent physician calls in question the fact that a person may have a

second attack of the disease, and that a second attack is not always life protective. The same difficulties will attend re-inoculations that attend vaccinations; persons will be equally neglectful under either system. We are opposed to the retrograde movement, and do not favor the reintroduction of inoculation, but insist that we have in vaccination a safe and certain preventive, not simply a palliative or modifier, as some choose to call it; but I firmly believe that we must handle it differently from what we do. We must obtain from it all the power it possesses, if we would exterminate the loathsome and pestilential affection. We will now briefly glance at the history of vaccination, after which we will express our views as to the manner in which it should be used, if we would accomplish all that we desire. That a disease sometimes appeared in the cow, which, if imparted to man, secured him against small-pox, was known long anterior to the time of Jenner. This fact was acted upon to a limited extent in different parts of the world, as in India, Persia, and some parts of South America. In some of the dairy counties of England, it was long since observed that the cows were subject to a pustular eruption, and the popular belief was, that if this disease was communicated to man, that he was safe from the influence of small-pox. To this circumstance, Dr. Edward Jenner directed his attention early in life. He was not, as is ordinarily supposed, the first to practice the artificial communication of the vaccine disease. But no one shares with him the credit of having brought the art into almost universal use. The inestimable advantages which have accrued to the human family, have immortalized him. He met with violent opposition, but we are truly thankful that his ardent enthusiasm, amidst all his discouragements, was not extinguished. The British Parliament recognised his claim and voted him £30,000 sterling.

It was in 1796, that Dr. Jenner made his first successful experiment. He was then residing in Gloucester county, in England, largely engaged in inoculation. He ascertained that those in whom the matter from the cow was introduced, were insusceptible to inoculation. His first vaccination was per

formed in 1796, upon a boy aged 8 years. In 1798, he published his investigations in an essay, entitled "Inquiry into the causes and effects of variola, vaccinal." In this paper he set forth his proofs so prominently that they attracted immediate attention and soon enlisted a host of co-operators. His assertions were verified. In 1799, it was introduced into the United States, and in 1800, into France and other parts of continental Europe. Jenner, in his first essay, announced as his conviction that when cow-pox had passed in a perfect manner through the system, that it was secure from the infection of small-pox forever. This opinion was mutually entertained by most of the physicians in Europe and America, until 1818. During that year an epidemic of small-pox pervaded Scotland; and many of those who had been vaccinated were its victims. Soon after, the same was observed in other localities. These facts stimulated physicians to make a more close investigation. The confidence of some was shaken in its prophylactic value, and I am sorry to confess that there are those among us to-day, prominent in the profession, who advise a return to inoculation. We have already stated that we are not of that number. Many great and good men have entertained the happy thought that vaccination was destined to make small-pox a disease of the past.

That future generations should have no personal knowledge of it, but, in order to accomplish this much-desired object, we must have universal vaccination and universal re-vaccination. Unless compulsory laws are passed, this will not be done. It must not be left optional with the people, a mere voluntary act. There will be in every community those who will be negligent and apathetic; others who will doubt its prophylactic virtues and discourage the operation. The United States, in this particular, are far behind many of the European nations. Many of the latter have laws requiring the operation, and they are not violated with impunity. In such communities, small-pox is almost unknown, except when carried into them by strangers. An Act of Parliament went into force in Ireland, on the 1st of January of this year, making it compulsory that

every child, born after that date, should be vaccinated within six months. For non-compliance with this regulation, parents and guardians are liable to a fine of ten shillings. We sincerely hope that this law will be enforced, and that, in due season, we will not witness so large a number of the noble and toil-worn sons and daughters of the Emerald Isle come to us with such disfigured countenances. We think the above law is somewhat objectionable for not making the limit three months instead of six, and not providing for re-vaccination. Dr. Jewell, of Philadelphia, says, in one of his annual reports, "That he desires to impress upon the Profession the inadequacy of voluntary provision to secure us from the ravages of small-pox. And further, that nothing less than a compulsory law, with a penalty attached for its violation, will prove an effectual barrier." Another eminent writer says, that "the absence of an efficient system of protection should be stigmatized as a national disgrace—almost a national crime." Another, equally eminent, says, "Believing, however, as I do, that the introduction and propagation of this pestilence are well enough understood for all practical purposes, I do regard all governments as responsible for the institution of proper and relevant efforts at prevention and circumscription, and deeply guilty when this is neglected." These are our views, with a certain degree of limitation. Guilt implies knowledge. If a government is ignorant, and acts prejudicially to the welfare of the people, we question the guilt. But if fully informed, and then acts in opposition to the best interests of its constituents, none can doubt the guilt. We believe there is no compulsory law in this city bearing upon vaccination. We assume that our municipal government is ignorant of its necessity. We think that it behoves this Medical Society, as the representatives of the Profession in this city, to inform them of the importance of such a law. That it will then be their duty to pass such an ordinance, and also to see that it is enforced. Neither should they rely upon our noble and philanthropic Profession to vaccinate gratuitously all who are unable to pay. We recommend that this Society shall advise them to appoint vaccinators for

the poor, at a reasonable annual salary. Also, that they shall prohibit any vaccinations, except performed by experts; that the public vaccinator shall be required to assist in a rigid enforcement of the law; that every child, born or brought to this city, shall be vaccinated within a limited period of time, and that a heavy penalty shall be impartially imposed for every violation of said law. If such a law had have been in existence in this city, and enforced even one year ago, what a world of suffering would have been saved! The lives of a large number of infants and children would have been preserved to have taken their places in the great and busy hive of the world. Many of the poorer classes feel their inability to recompense a physician who is qualified to vaccinate. They are compelled to resort to illiterate quacks who are not capable of judging as to the protective power of the so-called vaccinations; and who, placing but a small valuation upon their services, charge but a mere pittance. During last August, we witnessed, in the North Division, on Larrabee and Kingsbury streets, some of the deplorable consequences of the above. Within a small circuit there were many cases of small-pox and several deaths, among very young children. We were informed that they had no confidence in the protective power of vaccination. They based their convictions upon the fact that some four children, who had been vaccinated the spring previously, had contracted variola, and in whom it was said the vaccinations had been successful. Confident that they were entertaining erroneous impressions, we took considerable pains to dispel the error. Two of the children referred to were dead and buried, and whom I did not see. One was then in *articulo-mortis.* There was no vaccine cicatrix upon either of the children then living. The people were very illiterate and supposed the vaccination had taken because the children had an eruption subsequently upon their persons. The occurrence of small-pox in these cases had deterred others from protecting their children by vaccinations, laboring under the impression that it was of no utility. The operation was performed by one with whom we would refuse association, and who in my opinion was incapable of discrimi-

nating between good and bad vaccination. I also attended, last autumn, three German children suffering with small-pox, on South Wells street, between Harrison and Polk. These children had been vaccinated a few months previously, by an ignorant German woman. There was no evidence that the vaccination had been successful. There were no vaccine cicatrices. There was an abundance of negative testimony. She asserted very positively that those three children, one of whom succumbed from the small-pox, were as well vaccinated as any of the three hundred that she had done during the year. Many of you remember the quack Doctor of this city, who a few years ago purchased some matter at one of our stores, and who in his ignorance made use of the envelope of the matter, instead of the matter itself. It is needless to say that his cases were still susceptible to small-pox. These circumstances might be multiplied, but they are sufficient to demonstrate the necessity of our municipal government coming to the aid of the people and appointing public vaccinators, selecting capable men, and prohibiting the performance of the operation by the mere pretender. I believe, in most of the Atlantic cities, that there are physicians appointed to attend to the vaccination of the poor. If eternal vigilance is the price of liberty, so is eternal vigilance the price of exemption from small-pox. We know that we are not deriving the benefit from vaccination that we should. The forceps in obstetrics, Peruvian bark in malarial fevers, anæsthetics in surgery, were most valuable discoveries, but combine the benefits of all, and they do not equal that which has resulted from vaccination. We further believe that even among those of us who claim to be educated, and in possession of all the requisite information, can be found many who are not performing the operation in a manner calculated to give our patients the greatest amount of preventive security.

We do not wish to extend this report, but we feel that we cannot close it until we incorporate in it our objections to the common method adopted by the American physician in vaccinating. The majority of us trust to the introduction of matter in a single place, producing one cicatrix. If it is successful,

we concede its efficiency for a limited period of time. Some will be protected for life. But we are well satisfied, from many observations, that the protective power of vaccinations is, as a rule, greatly extended; that it secures a much larger number for life-time; and, if subsequently attacked with small-pox, much less likely to die, if there have been at the original vaccination three, four or more insertions of the matter in different parts of the body. Perhaps the same security could be purchased by re-vaccinations, but we all know the proneness of people to neglect them; hence we think it our duty to give them, while under our care, the greatest security of which vaccination is capable. The statistical tables, that have been recently published in London, give us additional assurance that we are correct. I quote from Mr. Marson's very valuable observation. He says, "that of the whole number of individuals attacked with small-pox, and previously vaccinated, seven per cent. die; of the badly-vaccinated, fifteen per cent. die; but in well-vaccinated persons—understanding by the term "well vaccinated" those having four or more cicatrices—the mortality is less than *one per cent.* He finally states, in reference to the statistics, "Test the question in which way soever you will, the result is in favor of producing four vesicles, at least, at vaccination.

In the public institutions of London, there are annually vaccinated about 20,000 individuals, and the class of persons all will admit, if subsequently attacked with small-pox, would go to the Hospital. But we are told that only about nine cases per annum of those publicly vaccinated, are admitted as small-pox patients, and that there has been but one death out of 36,000 of such patients. We believe that all the public vaccinators in London introduce the matter in several places. Prof. Hewitt, of London, says, "The power of vaccination to prevent those attacked with small-pox, from dying of the disease, is thus in direct ratio to the goodness and efficiency of vaccination." He urges four or more insertions.

We recommend an immediate abandonment of the common mode of vaccinating, and that hereafter we shall trust to no less

than four insertions at a vaccination. There are many other points to which we would like to allude, such as the selection and preservation of the material, but our report is already much too lengthy.

We ardently hope that our recommendations to the Society, that it exercise its influence to obtain the enactment of laws for compulsory vaccination, will be carefully considered. In conclusion, I desire to say that I do not know that this report embodies the views of the other members of the Committee. I am responsible for all its contents.

All of which is most respectfully submitted.

ARTICLE XX.

LIGATION OF COMMON CAROTID OF RIGHT SIDE AND EXTERNAL CAROTID OF LEFT SIDE.

Reported by F. W. LYTLE, Surgeon, 36th Ill.

Daniel Cox, æt. 28. Priv. Co. F, 15th Ind., wounded at the battle of Mission Ridge, Nov. 25th, 1863. Ball entered anterior to angle of lower maxilla on left side, fracturing the bone, making a ragged opening 1¼ inches long, passing downward under the tongue, cutting the floor of the mouth, coming out on the opposite side, a little below the cornua of the hyoid bone.

On the evening of Nov. 29th, we were called by Assistant-Surgeon Hatch, 36th Ill., to see this man, as he was bleeding profusely from wounds, and we had about one square to go to reach the building in which he was. On our arrival, found him bleeding from right side, the blood rushing from his mouth and wound in right side in a continuous stream of bright arterial blood supposed to be from a lingual artery. When we saw him, he must have lost one half gallon or nearly of blood, the bleeding having continued for several minutes, without any attempt to arrest it. The patient was placed in the semi-recumbent posture, and it was decided at once to ligate the

common carotid of right side. It was utterly impossible for him to lie down; as it was, the blood flowed into his mouth with such rapidity as almost to produce strangulation.

Surgeon A. McMahon, 64th Ohio, was the operator, and from his book the following notes are taken :—

The administration of chloroform could not be entertained; and, with the assistance of Surgeon Lytle, 36th Ill., an incision was made from exit of ball down the neck, on inside of sterno-mastoid, two and a-half inches, dividing the superficial structures and deep fascia; working with handle of scalpel, succeeded in exposing the sheath with descendens noni nerve, opened the sheath; passed the aneurismal needle, armed with ligature from without, inwards, and secured the vessel. As soon as the ligature was brought home, all hemorrhage ceased.

Had we seen the patient sooner, the proper course to have pursued would have been to ligate the lingual or external carotid, but it was a question whether it would be possible to find the former at this point; and, in finding the latter, so much time would have been consumed that it would have been unnecessary to have applied the ligature. The patient would have bled to death.

Under the circumstances, ligation could only be performed at the most available point—where it would soonest arrest the hemorrhage and afford the greatest probability of saving the man's life, even at the risk of violating one of the established rules of surgery, viz., "In wounds of its deep-seated branches, ligate the external carotid." In dividing the tissues, not a single arterial or venous branch was cut, which would have rendered the operation very simple, were it not for the continued flow of blood through the wound, completely obscuring the parts; but this was remedied to a considerable extent by the valuable assistance rendered by Surgeon Lytle, in the judicious use of the sponge. The operation, to be successful, was necessarily short. The pressure applied to carotid had very little effect on the hemorrhage, as the difficulty of breathing was very great, at best, without compressing the parts about the trachea.

In tightening the ligature, I watched the patient's face to see if any effect was produced, but none was visible, except an expression of relief from the pain incidental to the operation.

During the operation, an assistant had to introduce his finger into the man's mouth to free it from the clots which interfered with respiration.

This, upon the whole, has been the most frightful case that it has been my province to witness. The blanched appearance of the face, the anxious expression of his eyes, the almost absence of pulsation at wrist, the stream of blood arching from wound as if driven by a force-pump, his shirt and bedclothes completely covered with blood,—all rendered it a sight to appal the strongest nerve. Whisky and water were freely administered during the night—with beef-tea. He rallied well, considering the vast quantity of blood he lost. Pulse small and rapid; complained of great weakness. We were fearful hemorrhage might occur from opposite side, and he was closely watched during the night.

Nov. 30th—Morning.—No further hemorrhage during the night. Rested tolerably well. Pulse still rapid and weak. Very much prostrated. Stimulants continued during the day. Took quite a large quantity of beef-tea, of which he was very fond.

Evening.—No hemorrhage. More cheerful. Has taken a good deal of nourishment. Pulse has more volume and about 100. General appearance improved.

Dec. 1st.—Slight hemorrhage from wound on left side, which was controlled by per sulp. ferri. *Evening.*—No return of hemorrhage.

Dec. 2nd.—Hemorrhage occurred again from left side this morning; appeared to come out of lower maxilla, between the ends of fractured bone, as if coming from inferior dental artery. Plugs of lint, saturated with per sulp. ferri, were inserted with temporary relief from hemorrhage.

Evening.—Hemorrhage again occurred from wound, the patient losing scarcely any blood during this or previous hemorrhages from this side, as he was continually under the

supervision of a medical officer. This was again controlled with the iron. Finally, it was resolved that the only course to pursue, in the event of a recurrence of hemorrhage during the night, was to ligate the external carotid of left side.

About 12 o'clock, M., bleeding again occurred with considerable force, when Surgeon Herman E. Hasse, 24th Wis. Vol. (who had charge of the ward, but was not present during the previous operation), performed the operation of ligating the external carotid of left side, when the hemorrhage entirely ceased.

Dec. 4*th.*—Patient very weak. Pulse 100, small and weak. Appetite not very good. Can't take any solid food. Lives on fluids, beef-tea, farina, coffee, tea, thin gruel, whisky toddy. Milk-punch he cannot bear.

Dec. 6*th.*—General condition somewhat improved. More cheerful. Appetite better. Inclined to drowsiness. Pulsation can be felt over supra-orbital ridge, and outset of orbit on left side. No pulsation on right; face blanched.

Dec. 9*th.*—Doing well. Pulsation strong and full in temporal artery of left side; none on right. Pulse about 90, tolerably strong. Good appetite. Face lost its blanched appearance. Expressed himself doing very well.

Dec. 11*th.*—Patient improving rapidly. Pulse 86, with considerable volume. Appetite good; still takes a large quantity of beef-soup daily; thinks he will soon be able to go home. The ligature, from external carotid, separated yesterday; that from primitive, to-day. That condition of drowsiness has entirely left him. Wounds in neck granulating kindly, discharging healthy pus; no pulsation in temporal of right side.

Dec. 16*th.*—Face rather blanched; appetite not very good; complains of soreness in neck. Pulse full but somewhat gaseous. No return of drowsiness. Stimulants, with generous diet, continued.

Dec. 20*th.*—General condition improved. Pulse about 90, pretty full. Fluids pass from wound on left side, also from wound on right side. Lively and quite cheerful; piece of lower jaw rather loose; no evidence of union.

Dec. 24th.—Hemorrhage from small vessel—being quite superficial, controlled by iron.

From this time till the 20th January, 1864, when he was furloughed, he was carefully nourished, as before, with the addition of milk that we were enabled to procure for him. The wounds had healed, with good union of the fractured maxilla, and he was able to masticate soft food.

ARTICLE XXI.

DIPHTHERIA.

By JOHN D. JENNINGS, M.D., of Livingston, Ill.

This is a disease of late origin; or, at least, we do not have any account of it as a distinct disease, prior to 1771. Dr. BARD, of New York, writing in that year, describes a false membrane, similar to that found in croup. In his description, he discards the notion of ulceration or gangrene, which was spoken of by previous authors on the subject of sore throat. Believing these ulcerations, when they do occur, to be complicated with other disease, or that they were mistaken, it being nothing but white exudation of coagulable lymph. We hear nothing more said about it until the year 1826, when BRETENEAU wrote a treatise on Diphtherite, in which he says it is not attended with ulceration or gangrene, but is closely identified in every respect with croup. Since his time, the disease has been described by many French writers.

This disease appeared in France, and prevailed as an epidemic in 1855–6, and 7, during which years a great number died. The recoveries were attended with great debility.

I now come to the epidemic that is described in this country during the last two years. It first attracted general attention in England, of late years, in the autumn of 1857 and summer of 1858—during which time it visited many towns; and, since then, has prevailed in very many parts. In this country there

has been a very general prevalence of the disease, during the last two years, prevailing as an epidemic; and, in many localities, it has been very fatal. It is peculiar in its mode of attack, differing in almost every case but having, in the main, well marked characteristics that will distinguish it from other diseases, commencing usually with uneasiness in the fauces and pain on swallowing; gastric irritation, which frequently produces vomiting, disturbance of heptic functions, and a disturbance of the circulation. Sometimes the first symptoms are hoarseness, with altered tone of voice, not much swelling, but immediately an effusion of plastic lymph upon the mucous coat of the larynx and fauces, which becomes organized, spreading to the air passages, developing low fever, with a weak and quick pulse, hurried breathing, ending in death by asphyxia, the same as in pseudo-membranous croup, the majority of cases having a more insidious attack, with a more favorable termination. The first that attracts the patient's attention is pain on deglutition. On examining the throat, you find slight congestion, with considerable redness; here it may terminate, by acrid secretion relieving the congestion; but generally one or both tonsils become very much inflamed in a short time, sometimes with swelling of the parotid cervical and sub-maxillary glands; swallowing now becomes very painful; the tonsils and fauces have the appearance of indentation, looking like pits made by the kernels of wheat, showing that the mucous coat has become thickened in patches, which, with the effused lymph, gives it the appearance of ragged ulcers or gangrenous sloughs. This exudation is at first tough, elastic, white, or whitish-yellow shreds of membranes; but, as the disease progresses or becomes more malignant, it changes its color and becomes darker, with effusion of sanguino-purulent matter and fœtid breath, with the tonsils and fauces of a dark ash hue. This exudation, which is muco-sanguino fibrinous, spreads in the air passages of the head, giving a very offensive odor and increasing the danger of the patient, making convalescence very slow. Occasionally we have fever from the first symptoms of the disease, but not usually until the local inflammation of the throat has developed

itself. The fever is of a low and malignant form; it may be sthenic in some, and is at the commencement, but does not remain so long, but soon assumes the æsthenic or typhoid character.

The blood is changed in its normal proportions to its relative constituents, having less fibrin and a tendency to disorganization; hence the frequent occurrence of epistaxis and sanguineous effusion. The nervous system is very deeply implicated, with general prostration of the whole system, which is the greatest danger of the disease. The stomach is often disturbed in the commencement, inducing emesis. Constipation of the bowels generally occurs, except when they are disturbed by the acrid secretions of the throat, which produces diarrhœa. During the inflammatory process in the throat, there is hypersecretion of the mucous coat, commingling with the lymph effused, thereby relieving the loaded vessels and preventing ulceration. The secretions are acrid in their character, producing excoriations upon any surface they come in contact with; the urine is acrid, scanty, and in the latter stages frequently entirely suppressed, followed by anasarca, and requires to be strictly attended to throughout the whole treatment of the disease. This is no doubt a blood disease, which develops its virulent poison upon the mucous coat of the throat and air passages, producing, in those predisposed, a pseudo-membraneous exudation; in others, inflammatory swellings of the tonsils and glands about the neck, depressing the vital as well as the nervous system. The virulence of the poison is such that it has a tendency to lessen the plasticity of the blood, by which its nutrition is destroyed, which is seen by not coagulating, becoming less in fibrin and deficient in red corpuscles, producing malignant æsthenic inflammations, depressing the whole system, causing the muscles to lose their tonicity, becoming totally and less cohesive, which may be accounted for in part by the poison inducing the disease, and in part by difficult respiration, thereby not relieving the blood of the waste material of the organized system by arterialization, which remains as poison; the febrile disturbance is generally slight; pain is not in proportion to

other symptoms, sometimes quite absent; the voice dull and nasal, moderate thirst, and loss of appetite; it does not especially attack the puny and ill-fed, but is generally confined to those under 18 or 20 years of age. The appearance of the tonsils and fauces accords with the description given; bowels constipated; nervous system prostrated toward the close of the disease; secretions generally acrid; epistaxis with the blood not coagulable, but remaining watery, and in fact the solids and fluids in a septic condition. In all the malignant cases, the sweat and urine were decidedly acid; and, in fatal cases, the urine was entirely suppressed; in those dying from suffocation, by the false membrane, there was little or no swelling, not much fever, it being sympathetic or secondary. Dr. CLARK thinks it is contagious. During an epidemic, one thing I observed in the cases that I saw of that epidemic, and that was in nearly all cases of a malignant character, which lingered, or there was ulceration and gangrene, with sloughing of the fauces and other parts of the throat, and many patients were mortified before they died. Any external wound or abrasion on any surface was immediately followed by gangrene. The treatment will depend on our knowledge of the pathology of the disease. To counteract and eliminate the poison of the blood sustaining the patient, excite secretion and equalize the circulation are the main indications. In mild cases, little general treatment is required; the patient may take a dose of magnesia or some other saline cathartic, and use alum gargle. In somewhat severer cases, repeat the cathartic with ipecac and use a mixture of chlorate of potassa with lemon syrup, and, in addition to alum, use mur. tinct. ferri as a gargle; it has been recommended to use glycerine in false membranes as a solvent, which is good; but I think the chlorate of potash is better. You are debarred from blood-letting and tracheotomy on account of the nature of the disease producing ænemia in one case and gangrene in the other. When you have a high grade of inflammation, a full, strong pulse, with high fever, some would recommend bleeding; but it is found that venesection does not exercise the same controlling influence on inflam-

mations of the mucous coat as other organs, and especially in this disease it does not relieve the tendency to plastic effusion; and again this disease early assumes the malignant type by a depraved state of the blood, which is shown by the dark hue and fœtid odor of the exudation; therefore it is better not to bleed and deplete too much. At first, you may give an active cathartic, and that one of a character that will stimulate the secretions, and at the same time not depress the vital powers. Calomel and ipecac, combined with carbonate of ammonia and soda, followed with Rochelle salts, if necessary, or any other saline cathartic, with the free use of chlorate of potassa, sesqui chloride of iron in tincture, diluted with nitrous ether. The preparation of potash I prefer, is—chlorate of potash, one ounce; syrup of lemon, four ounces; water, four ounces; sulphate of morphine, two grains. Dose, table spoonful every four or five hours, and use as a gargle the mur. tr. ferri, diluted with nitrous ether, also given two or three times a day, internally, as a tonic and a diuretic, together with soda and potash, which have a tendency to dissolve the coagulated lymph and keep the throat clean. It will be necessary to use expectorants, ipecac and opium, remembering to sustain the patient by iron spoken of, or quinine and ammonia with proper diet, without regard to inflammation; or, in other words, use constitutional treatment. You must counteract the poison in the blood by the potash, and eliminate from the system through the kidneys and pores of the skin by the above diuretics and diaphoretics. I do not think the free use of calomel in small doses beneficial, but the saline cathartics—soda, potash, and chlorates—should be freely used. For local treatment, use means to divert the blood from the inflamed parts and to equalize the circulation by sinapisms to the feet, legs, and hands or arms, external stimulants to the neck; and, as the disease advances, fomentations of hop poultices externally to the throat; use muriated tr. iron, nitrate of silver, sulphate of copper, alum, tanin or oak bark in advanced stages; apply sulphate of copper and nitrate of silver as a caustic, and, between caustics, use glycerine for its lubricating as well as its solvent powers. The lancet leeches

and blisters, in malignant cases, should not be thought of; but, in their stead, use quinine, whine whey, carbonate ammonia, and animal broths, with fresh air, good nursing, and you may expect nine out of ten cases to recover.

ARTICLE XXII.

CASES READ BEFORE THE CHICAGO MEDICAL SOCIETY.

By HIRAM WANZER, M.D., of Chicago, Ill.

Mr. President and Gentlemen:—Permit me to present you a synopsis of a few surgical cases, with a pathological specimen:—

The first case was an injury of the leg. I was called to Capt. B., at Bridgport, on the 12th of June last. While standing on the bow of his boat, his right leg was caught above the ankle, in a coil of running-rope, attached to a tug. It started instantly, producing a compound comminuted fracture of the tibia and fibula at the lower third. Wishing not to shoulder the entire responsibility, I despatched a messenger for Prof. E. Andrews and Dr. A. Fisher. After administering the anæsthetic, a large detached fragment of bone was removed from the crest of the tibia and the fracture reduced. Finding circulation in the anterior and posterior tibial arteries, conservative surgery was adopted. The soft parts were seriously mutilated. For three or four days, hopes were entertained of his recovery. Granulations began to make their appearance. On the fifth night after the accident, *sudden* untoward symptoms followed. He became delirious, tore off his dressings, brought the limb around at right angles, rupturing a large vessel, probably the posterior tibial. Before we arrived, the blood had extravasated throughout the entire tissues of the leg and nearly all the structures of the thigh. There was but little external hemorrhage. His early habits of dissipation had to do with those uninviting symptoms, and they might have been

anticipated by treatment, had we not been misled by a denial of them. He died on the morning of the seventh day, having delirium traumaticum, consequent upon the compound comminuted fracture of the tibia and fibula, and undoubtedly a too sudden withdrawal of his accustomed stimuli.

The second case was an injury of the face. I was called to Martin M., drayman, aged 45, on the 21st of July last. He had been kicked by a horse, over the left eye and face, producing a compound comminuted fracture of the left malar and superior maxillary bones. The bones were so displaced, inverted at different angles in the wound, and detached from their connexions, that reposition was impossible, rendering necessary the extraction of the entire malar bone and that portion of the superior maxillary lying external to the infra-orbital canal and a line falling perpendicularly from it—thus carrying off the outer lower third of the anterior third of the orbital cavity, exposing a triangular opening into the antrum of Highmore, measuring nearly an inch in its diameter. For several days the structures about the eye were swollen; the lids discoloured and œdematus; the wound nearly healed by the first intention. The operation was nearly bloodless. I performed it without chloroform.

Seven weeks from the injury, he received a fall, fracturing the right clavicle at its outer third. I was again summoned; I reduced it in the usual way, by a wedge-shaped cushion in the axilla, approximating the elbow to the side by a figure-of-eight bandage.

He made a rapid recovery from both these accidents, with slight deformities. There is a small depression in the face at the cicatrix, and a protuberance upon the clavicle at the seat of fracture, showing there was not perfect coaptation of the fractured bones. There are two slight pathological conditions following both those injuries, which, however, do not interfere with his accustomed pursuits. First; he suffers, by over-exertion, exhaustion and weakness of the muscles of the arm; also, imperfect vision in the injured eye. The amaurotic symptoms have accompanied him since the accident. Nine months after,

Dr. E. L. Holmes made an ophthalmoscopic investigation. This is his own language:—"By simple inspection, I find nothing abnormal in the eye except a marked dilatation and slight irregularity of the pupil. The patient can read, with some difficulty, the large letters of title pages, at the distance of eight inches, and can see the outlines of buildings across the street. The following opthalmoscopic appearances are discovered:—There are two small irregular dark flocculi floating in the vitreous humor. With this exception, the refracting media are transparent. The papilla of the optic nerve is ill-defined, being partially concealed by a yellow-colored deposit, which extends in irregular points beyond its periphery. The vessels of the retina are somewhat atrophied and covered in places with the yellow deposit just mentioned, which exists in patches over the whole concave surface of the eye. A very few of the vessels of the choroid can be seen at the upper and outer part of the eye. No pigment deposits are anywhere present. This absence of pigment is quite unusual in my experience in cases like this. The general appearance of the retina may be compared in some respects to that represented in Jaeger's ophthalmoscopic plates, No. VIII. The amblyopia is undoubtedly a result of inflammation of the retina and choroid, and possibly of the optic nerve, produced by the injury."

The fourth and last case I will present to the Society. I was called, too, early in February last. The boy, aged five years, had received an extensive injury from a circle of iron, weighing 280 lbs., falling upon the lower third of the leg. Notwithstanding the pulpified condition of the soft parts, as well as the fracture of the tibia and fibula, an attempt was made to save the limb. The foot retained nearly its normal temperature for thirty-six hours. From this period, gangrene occurred in all the superficial structures below the injury. With the assistance of Prof. E. Andrews, amputation was performed at the middle of the leg. The little patient stood the operation well, and reacted finely. In about one week after, a terrible neuralgia occurred in the stump. The symptoms were somewhat similar to those observed in traumatic tetanus; the

paroxysms were not continuous; the liberal use of anodynes had but little effect; opiates seemed rather to aggravate the pain, which gradually disappeared under the use of valerian and hyosciamus. The ligatures were allowed to remain six weeks after the amputation. In accordance with the request of the Chicago Medical Society, I made a dissection of the amputated limb, assisted by Dr. JOHN BARTLETT. The structures were so extensively injured that it was impossible to make a perfect dissection. The cutaneous and cellular tissues were pulpified. The muscular structures were extensively lacerated. The muscular portions of the peroneus brevis, the tibialis posticus, and flexor longus policis, were cut. The tendons of the gastrœnemius plantaris and peroneus longus were uninjured; the anterior and posterior tibial arteries were destroyed, with their accompanying veins; the external saphenus was torn across; the internal saphenus was uninjured; the anterior tibial nerve, with the external division of the musculo-cutaneous, were destroyed; the posterior tibial nerve, with the internal branch of the musculo-cutaneous, were entire. The peroneal vessels were lost in the confusion of the parts. There was compound comminuted fracture of the tibia and fibula. That the foot should retain its temperature for so many hours after these injuries, is remarkable.

Army Correspondence.

SMALL-POX HOSPITAL, U.S.A., MEMPHIS,
April 14, 1864.

Prof. N. S. DAVIS:

SIR:—I have been on duty in the Small-Pox Hospital, at this place, for several months past, and have noted many facts of interest in reference to the fatal and loathsome disease of small-pox.

The location of the hospitals is, every way, good; they are situated one mile east of Main street. The grounds are exten-

sive and beautifully decorated with ornamental and shade trees, and are finely adapted for a place of recreation for the convalescents. The main building is a large brick, two storys high and a basement—is 60 ft. by 36 ft. A large hall, 12 feet in width, divides the building lengthwise, with a cross hall through the middle. Arranged on either side of the halls are rooms 12 ft. square, 10 ft. high—each ventilated and lighted by two large windows—each warmed by a "fire-place," large and of splendid draught, carrying off much foul effluvia. Each room has five patients. The upper part of the house is arranged as the lower floor—*both* floors accommodating only 60 patients. The basement is used as a kitchen, convalescent dining-room, and for store-rooms. The remainder of our patients, over 300, are in common hospital tents—6 to the tent—which is crowding far too closely; yet it has been impossible to do better, as the disease has increased so rapidly as to prevent any better accommodations being provided. Insufficiency of room and proper ventilation, as well as *extremes* of temperature, have been obstacles to the satisfactory treatment of our cases. As pulmonary diseases have often supervened, erysipelas and pymenia frequently attacked the patient, about the time convalescence was fairly beginning—many times, resulting *fatally*, because of the want of *suitable accommodations*. You will see, by the accompanying table, that but a small proportion of the patients have even been vaccinated; therefore we have had a very large number of extremely bad cases—many of the confluent, malignant variety, proving fatal—often within 72 hours after we received them in hospital.

You will not fail to notice the small number of *varioloid* cases. We have had several hundred *negro* soldiers as *patients*, and, as a usual thing, *they* never have been vaccinated, and have small-pox in its most *aggravated* form, with a large proportion of deaths—being very much greater than among whites, everything being equal.

Total number of patients admitted into "Small-Pox Military Hospital," Memphis, Tenn., from 1st January, 1863, to 1st April, 1864 1,498

No. admitted with small-pox	1,209
" " " varioloid	289
" of deaths in that time	379

First Quarterly Report, for 1864, *of cases received into Small-Pox Hospital, U.S.A., Memphis, Tenn.*

MONTHS.	Whole No. of cases admitted.	Vaccinated once or more, successfully.	Never vaccinated.	Varioloid.	Small-pox.	Deaths.
January	132	41	91	35	97	21
February	196	62	134	61	135	53
March	295	102	193	66	229	98
Whole No. Received..	623	205	418	162	461	172

Our treatment has been on general principles, with an external application to face to prevent pitting. The local remedy most beneficial has with us been—℞, Iodine and Glycerine, equal parts, applied freely every two hours, for 24 hours after the eruption appears, which produces desquamation about a week earlier than if left to nature, and leaves the surface smooth and natural.

ALIQUIE C. MATCHETTE, U.S.A.

Selections.

ON THE CALABAR BEAN, BY CHRISTISON; TH. R. FRASER; D. ARG. ROBERTSON; W. BOWMAN; J. W. OGLE; A. V. GRAEFE; E. HART; J. SOELBERG WELLS; J. HULKE; HARLEY. (From "Schmidt's Jahrbücher," Oct. 1863.)

Since a long while, the want of a remedy was felt, which acted antagonistically to atropine and the other mydriatics for

producing a prompt contraction of the pupil. After various substances, particularly opium and ergotine, had proved ineffective, this remedy has been found in the Calabar Bean.

The drug was first mentioned by ROBERT CHRISTISON, in Edinburgh, in a paper "On the properties of the ordeal bean of old Calabar, West-Africa," published in 1855; but only its action, when taken internally, had then been examined. Th. R. Fraser, Assistant to the Professor of Materia Medica in Edinburgh, drew attention to the myotic qualities of the remedy. We copy from Fraser's remarks* the following:—

The bean comes from a *runner*, climbing on the bushes and trees, of the natural order—Leguminosæ; sub-order—Papilionaceæ; tribe—Euphasoleæ, growing in West-Africa, west of the river Niger (between 4° and 8° N. lat., and 6° and 12° E. long.), on the Calbary River. This region is inhabited by negro tribes. These call the bean Esere, and use it as an ordeal for criminals, in order to prove their innocence or guilt. The population of Calabar is estimated at 100,000, and of these upwards of 120 are reckoned annually to be thus sacrificed.

From the careful description of the plant (Physostigma venenosum, Balfour) I abstain, and merely mention that the root is spreading with numerous fibrils often having small succulent tubers attached. Inflorescence, axillary; on pendulous multifloral racemes; rachis of each raceme zig-zag and knotty. Calyx, campanulate, four cleft at apex, the upper division being notched and its segments ciliated. Corolla, papilionaceous; veined with a pale pink, having a purplish tinge, and curved in a crescentic manner. Stamens, ten, diadelphous. Pistil, more than one. Stigma, blunt, covered by a remarkable ventricular sac or hood, which extends along the upper part of the convexity of the style, having a resemblance to an "admiral's hat set in a jaunty manner." Legume, dark brown and straight, when mature, about seven inches in length, elliptico-oblong, with an apicular-curved point, and with outer and inner integument easily separable. Seeds two or three, separated from each other by a woolly substance.†

These so-called beans are on an average a little longer than one inch. They are irregular reniform, having the appearance of a somewhat flattened fusiform body bent on one of its edges.

As obtained from Calabar, the beans have a gray color, and

* *Edinburgh Medical Journal*, VIII., IX., and X., 1863, a Monograph entitled "The Calabar Bean," Edinburgh, 1863.

† See Professor Balfour's paper in the Transactions of the Royal Society of Edinburgh, vol. XXII. Part II.

are incrusted with earthy matter. This is readily removed by washing, and a somewhat shining integument is exposed of various shades of brown, ranging from a light coffee to an almost perfect black.

The description of the kernel and spermoderm, consisting of three layers, I may dispense with.

While the other parts of the plant are indifferent, as it seems, to the animal organism, the beans have strongly poisonous qualities. According to the missionaries, those who have eaten them, first feel a violent thirst. Afterwards, the poisoned individual cannot swallow; mucus flows from the mouth; convulsions, particularly cramps in the muscles of the back, come on, etc. During all this, the patient is conscious of everything, and even the language remains up to shortly before death, which may ensue within half an hour. Sometimes vomiting occurs, after which the heat diminishes; and, except headache, all other symptoms disappear. Small doses (up to 12 grains) with which Christison made his experiments, soon caused an increasing pain in the epigastrium with retching, a sentiment of dyspnœa, cramps in the muscles of the breast, vertigo and weakness in the limbs, strong secretion of saliva, and irregular, slow motion of the heart, so that in one case the pulse made only 20 beats.

In rabbits, the alcoholic solution of the kernel of the bean, injected subcutaneously into the cellular tissue, produced, after five minutes, a copious discharge of urine. The fæces were eliminated normally in the beginning, but became more and more thin and watery; the hind legs were paralyzed, and the animal did not move when lifted up by the ears. After 20 minutes the pupils contracted, but not to the highest degree; they did also not cease to act somewhat on light. After 30 minutes, the animal would lie stretched out and respiration became noisy. During these experiments, the paralysis ceased after 2 to 3 hours, and only the diarrhœa and the strong secretion of urine remained for 12 hours.

Locally brought in contact with the muscles, the alcoholic extract produced loss of contractility; the intestines, painted over with a solution, ceased to move; in the cellular tissue it produced redness and inflammation, but not on the mucous membranes. Worms, which were also painted with the solution, first moved as if they had cramps and then died paralyzed; a partial paralysis could be produced by only painting them at isolated points. Internally the Calabar Bean (the extract prepared from the kernel) produced in the rabbit first slight

shakings of the posterior extremities, then weakness thereof and evacuations of fæces and urine, contraction of the pupils, discharge of mucus from the mouth, and irregular respiration. Reflex movements cannot be produced. The animal finally seems dead, and the pupils dilate instantaneously. When it was opened, immediately the muscles of the extremities and the diaphragm were found to be yet contractable, and the heart also beat for 1 to 1½ hours longer; after this the left auricle ceased to move, then the ventricles, and finally the right auricle. The veins of the thorax were strongly injected; the lungs hyperæmic; in the stomach and intestines there was no change; liver and kidneys contained much blood; fauces and larynx were covered with mucus; there was much serum in the abdominal cavity; brain and spinal cord were unaltered, the membranes of the former hyperæmic.

Strong doses, given at once, caused instantaneous paralysis of the hind-legs, with slight cramps, flowing of mucus from the *nares*, strong secretion of tears, contraction of the pupils, and death after a few convulsive respirations. The pupils dilated immediately after death. In such cases there was no contractility of the muscles to be demonstrated in the cadaver; liver and lungs seemed normal; the intestines and bladder were filled; the heart in diastole, only contractable for a few moments by irritation; the peristaltic movements of the intestine were barely noticeable. In order to examine the local action of the remedy on the eye, Robertson* prepared an extract from the pulverized bean, which he dissolved in alcohol in three different concentrations. The weakest solution was produced by extracting 30 grains of the bean by alcohol, evaporating to desication and dissolving the rest in 1 dram of water. Thus a dirty light red-brown fluid was obtained. By further extracting and evaporating, a four times and an eight times stronger extract were obtained. After R. had examined his eyes and found that his pupils were 2 lines in diameter each, and that with each eye Jäger's No. I. was read at 5 inches distance, he put a drop of the weakest solution in his left eye, which did not produce any more irritation than a drop of water. After 10 minutes, objects at a distance of 1 foot became indistinct: at the same time all objects seemed larger and nearer. There existed also a sensation of tension in the eye, as if very minute objects had been assiduously looked at. Both pupils were yet equal in size. After 20 minutes, the left pupil had only a diameter of 1 line; objects further distant than 9 inches ap-

* *Edinburgh Medical Journal*, VIII., p. 815, March, 1863.

peared dim; every thing looked at seemed larger and nearer. The right eye was normal. After 30 minutes, the left pupil was only $\frac{2}{3}$, the right only $2\frac{1}{2}$ lines in diameter. The far-point of the left eye, 8 inches. After 50 minutes, the left pupil was $\frac{1}{2}$ and the right one 2 lines; a sensation of pressure and fatigue became manifest, when the subject of the experiment attempted to read; objects at 10 yards' distance were recognized with difficulty. After 6 hours, the left pupil was 1 line, the right one $1\frac{1}{2}$ lines; both reacted on light. After 12 hours, the left pupil was $1\frac{1}{2}$, the right one $2\frac{1}{2}$ lines in diameter. The following morning both pupils showed yet a slight difference, and the left eye was somewhat weak.

In a second experiment it was tried to find out the action of atropine when introduced into an eye, the pupil of which is at its maximum of contraction in consequence of the application of the extract of Calabar Bean. After contraction had been brought about in 25 minutes (there still existed some capacity of reaction), atropine produced dilatation to the normal size in about 2 to 3 hours. At the same time it was found that atropine in a solution of 2 grains to an ounce of water acts more strongly than the weakest solution of the extract of Calabar Bean, as the former in this experiment again dilated the pupil without a renewed application, after the pupil had been contracted anew by a second instillation of the solution of Calabar Bean. In a third experiment it was recognized that an already atropinized pupil begins to contract 10 minutes already after the application of the strongest solution of Calabar Bean, but that the action of the latter was not strong enough not to allow the action of the atropine again to appear; and that, on the contrary, a constant contraction of the pupil took place only after a second instillation of the extract of Calabar Bean had been made.

Bowman has also experimented on his own eye, as stated by Wells.* After 5 minutes, he felt a strong tension in the neighborhood of the ciliary body, as if something crept about there.† After 10 minutes this sensation had yet increased, and he felt also some lancinating pain. After 15 minutes, the near-point was, at the left side, $6\frac{3}{4}$ inches; while, in the right eye, to which nothing had been applied, it was removed to a distance of 15 inches. The far-point seemed equally distant in

* *Med. Times and Gazette*, May 16, 1863.

† Coetaneously with this sensation of creeping, I have frequently seen in patients twitching movements of single fibres of the musculus orbicularis palpebrarum.—[Ed.

both eyes. After 20 minutes, No. XVII. Jäger was seen at 15 feet, but the letters oscillated: they disappeared and returned alternately. The left pupil was then contracted to the size of the head of a pin, remained in this state for 18 hours; and, in the course of three days, again became normal. With this dilatation the reaction of the pupil on light became noticeable on both eyes. 25 minutes after the application, there existed astigmatism: the vertical staffs of a window appeared perfectly distinct at a distance of from 6 to 10 feet, while the horizontal ones seemed dim and angular. This was remedied by a concave cylindrical glass of 14 inches focus. With a cylindrical glass of 50 inches focus, distant objects appeared palpably smaller. This astigmatic state was yet found 18 hours after the application.

Ogle* has also made numerous experiments, which constantly showed the prompt contraction of the pupil after the application of the remedy. The action of the drug on the apparatus of accommodation, Ogle has not considered; and experiments in that direction are only then valuable if they are made upon sufficiently intelligent persons, or by physicians on themselves.

De Graefe† has tested the new myotic on 9 healthy persons. The average time for the setting in of contraction was 14 minutes with the weak, 12 minutes with the strong solution; the duration of contraction with the former 2, with the latter 3 days; the maximum of contraction lasted from 6 to 18 hours. The altered state of refraction, *i. e.* the cramp of the muscle of accommodation and the approach of the near-point, lasted much less in Graefe's experiments: it reached its height in 10 minutes, and remained there but from 10 to 20 minutes. The apparent increase in the size of objects and change of illumination were also observed; the acuteness of vision was reduced from 1 to $\frac{2}{3}$. Ophthalmoscopically there appeared no change of circulation. In a patient who had no iris, but good vision, the action on the ciliary muscle was also manifest. Experiments on birds showed the action of the drug on the pupil of these animals to be very brief; on amphibia and fishes the remedy remained without influence. De Graefe also satisfied himself that atropine is a much more powerful irritant in an opposite sense than the Calabar Bean. The latter is not capable of contracting the pupil after it has just been dilated by atropine; the action of the latter also again appeared, when in an atropinized eye the Calabar Bean had for a short time

* *British Med. Journal*, June 13, 1863.

† Deutsche Klinik, 29. 1863.

produced a medium degree of contraction. When the pupil had first been contracted, atropine always acted, but somewhat slowly. The remedy acted also on the iris, when it was abnormal but not totally atrophic, f. i. in glaucoma and in a case of fistula of the cornea.

From all hitherto published experiments, it results that the Calabar Bean first produces a subjective sensation of tension in the ciliary body, which may be recognized also by the determination of the near-point and the range of accommodation; that it also causes contraction of the pupil; that the contraction reaches its height in the course of an hour; that the iris loses during that period its contractability; and that the dilatation to the normal size from this contracted state requires less time than the contraction of the pupil, when dilated by atropine (the latter circumstance probably depends on our incapacity up to the present time to extract entirely the active principles of the Bean). Simultaneously with the tension of the ciliary body occur the symptoms of myopia with a small range of accommodation, and of astigmatism. The remedy, therefore, acts by producing a cramp, by irritation of the ciliary branches of the oculo-motorius, in the ciliary muscle and sphincter of the pupil; it does not paralyze the dilatator pupillæ, as otherwise it could not produce complete contraction in a previously dilated pupil. It is, consequently, in so far an antagonist of atropine as the latter irritates the dilatator of the pupil.

Therapeutically the remedy will find the following applications: 1) Perhaps in retinitis, with great sensibility to light in order to moderate the admission of light. 2) In mydriasis, consecutive in some cases to debilitating diseases (Typhus, Diphtheritis, etc.) and to injuries. 3) In ulcers at the margin of the cornea, in order to avoid incarceration of the sphincter of the pupil after perforation. 4) In artificial mydriasis, in order to do away with the dazzling, which is very disagreeable to patients after having been examined by the ophthalmoscope, particularly if they have but one eye. [To these indications may be added the following: 5) In those corneal opacities with a transparent centre, which produce, when the pupil has its normal size, dazzling by diffusion of light. 6) In similar circumscript opacities of the crystalline body, situated near the centre of the latter, and in dislocations thereof. 7) In abnormal mobility of the lens, with a tendency to fall into the anterior chamber. 8) For the discovery of simulated amaurosis, the pupil being dilated with atropine. 9) In wounds of the cornea and sclerotic, with a recent prolapsus of the pheripheric

part of the iris. 10) Perhaps in diseases of the ciliary body.]

E. HART* has first made experiments in London with the Calabar Bean in paralytic mydriasis, and states that his experience entirely coincides with the facts already communicated by us. He considers it appropriate to instillate a fresh drop every 4 days; he himself used a solution of the extract of such a concentration that one drop contained the extractive matter of 3 grains of the crude drug. He furthermore says that the alcoholic extract is soluble in glycerine, and that this solution is more durable than the watery one, which already, after a few days, becomes decomposed.

WELLS had an opportunity to use the remedy in a woman of 26, who had rheumatic pain in the right half of the face; and, since three months, mydriasis on the same side, while the left eye was normal. We merely mention, from his very carefully communicated observations, that the affected pupil had a diameter of 4 lines and was immovable, and that the eye had a near-point of 18 inches for XVI. of Jäger's type. At the height of contraction, No. I. was seen from 10 to 12 inches, and a little afterwards from 8 to $10\frac{1}{2}$ inches; the normal range of accommodation was therefore not re-established. When on the other (sound) eye the pupil was artificially contracted, it was determined that its near-point could be brought to 3 and its far-point to $5\frac{1}{2}$ inches. From this it appears that the tension of the muscle of accommodation in the sound eye is artificially increased to a greater extent than in the eye affected with paresis of that muscle, as was to be expected. A cure of the disease in the patient was not effected, and it was necessary to apply every 3 or 4 days a fresh drop of extract of Calabar Bean.

HULKE has made experiments, as stated by HARLEY,† on three patients. In the one, who suffered from paralysis of both oculo-motor nerves in consequence of syphilitic periostitis of the orbit, the pupils contracted to 1 line, and the near-point approached from 20 to $12\frac{1}{2}$ inches. In another, with mydriasis of the left eye of 4 years' standing, consecutive to a traumatic periostitis of the orbit, the pupil contracted from a diameter of 3 lines to $\frac{3}{4}$ of a line, and the near-point approached from $8\frac{1}{2}$ to 6 inches. In the third case, with rheumatic paralysis of the oculomotor, the near-point was approached from 10 to 5 inches, and the pupil contracted to a diameter of 1 line.

—*Amer. Jour. of Ophthalmology.* GEISSLER.

* *Lancet*, No. 37, May 30, 1863.

† *Med. Times and Gazette*, June 30, 1863.

ON A NEW MODE OF APPLYING ATROPINE.

By JULIUS HOMBERGER, M.D.

In the last number of the first volume of this Journal I have alluded to the efficacy of applications of sulphate of atropine, in substance, into the eye, in all those cases which indicate otherwise repeated instillations. The use of solutions of atropine, as well as atropine ointment, and even Streatfield's atropine paper, will, I think, henceforth be limited to the dilatation of the pupil in ophthalmoscopic examinations. I have since that time experimented with atropine on all my patients in the solid form only, and I must state that the results have been such as to justify the most enthusiastic recommendations. The dilatation of the pupil produced in eyes without disease of the iris, in cases of keratitis, wounds of the cornea, etc., etc., lasts usually from four to five days. The quantity of atropine placed into the lower palpebral sac seems to have a decided influence on the duration of dilatation of the pupil. The following is an instance of this long action: By mistake, I had put atropine in the sound eye of a patient, who applied for treatment, and when, fifteen minutes later, I found the error, the pupil was considerably dilated. I applied the atropine to the diseased eye, and, in order to neutralize the effects of atropine on the good one, I put a square of Calabar bean paper in the latter. The pupil became smaller, after about twenty minutes; but the patient returned in the evening, with a pupil as large as before. I sacrificed, during the succeeding three days, eight squares of the Calabar bean paper, which is, at the present moment, such a treasure in this country as not to be freely dealt with, and the dilatation always returned, and had only entirely disappeared when I saw the patient on the seventh day. There is no doubt that the large quantity of atropine, taken endosmotically into the humors of the eye, was the cause of this remarkably long-lasting effect; and I suppose that the rapid dilatation of the pupil, by detachment of posterior synechies, which I obtained both in cases of chronic and acute iritis, with not more than one application daily, must be attributed more to the reception of the alkaloid into humors and tissues, from where it exerted a continual action on the iris, than to the sudden effect of a high dose of the remedy. That the active principles of the Calabar bean contract the pupil momentarily, may be easily explained. It may be supposed that the endosmotic process is more active, through the cornea

than through the sclerotic, and that, therefore, the atropine contained in the aqueous humor is neutralized, and, after having received an over-balancing quantity of the active principles of Calabar bean, acts on the iris; while, after some time, the larger quantity of atropine, yet contained in the vitreous humor and the other tissues, neutralizes the Calabar bean, and again produces dilatation of the pupil. I have seen that, within two days, and with only one application of atropine daily, large adhesions of the iris were torn from the anterior capsula, sometimes leaving there intensely black spots, and effused lymph, the former of which derived their origin from the uveal surface of the iris. In one case of syphilitic iritis, two *nodi*, situated near the pupillar margin, and which had resisted the first applications of atropine, though the rest of the iris had been considerably retracted, were removed, about one line towards the periphery, on the fifth day. This is the more remarkable, as their size had not diminished during that period, and the inflammation was yet considerable.

It cannot be questioned that it is much easier to introduce a solid particle into the eye, than to introduce a square bit of paper; that the latter can sometimes not be removed without the aid of forceps; that the lids of iritic patients have, sometimes, to be kept open for a considerable time, while the paper is removed, in spite of the patient's sensitiveness to light; and that in a certain number of cases the patients complain of the slight irritation produced by the paper. While these little inconveniences do not appertain to the application of atropine in substance, which is rapidly dissolved, and felt only for a moment as a foreign body, I think, particularly, the circumstance that it is possible to conveniently saturate the tissues and humors of the eye, with the remedy, will render this method also of greater therapeutic value.

It may be set down as a fundamental point in the treatment of iritis that the dangers of this disease, for vision, consist *merely in the formation of adhesions between iris and anterior capsula.* During the acute stage of the disease, the adhesions threaten to glue the pupillary margin to the capsula. Either, if lymph is effused into the pupillary space, the eye becomes useless by closure of the pupil, after the acute symptoms have subsided, or the synechies become the points of origin of a chronic process, which very frequently leads to a number of complicating changes in the choroid, ciliary body, and lens, almost certainly fatal to vision.

The danger of the formation of synechies is, therefore, of

primary importance in the treatment of acute iritis; in fact, a case of this disease can only be considered as cured if no adhesions are left after the inflammation is gone. The first object of the oculist treating this malady must therefore be to dilate the pupil, at all hazards. To rely on the removal of adhesions by constitutional medication, and to be satisfied with a mercurial treatment, with instillations of atropine three or four or six times daily, would not be judicious, in my opinion. The application of the mydriatic *coup sur coup* is the source of considerable irritation to the eye; and, on the other hand, the resorption of the fluid, with the tears, through the lachrymal canal, exposes the patient to the danger of poisoning, to the same extent, as the application of atropine in substance.

The method of treating iritis, which I would propose, consists in the introduction of the fortieth part of a grain of atropine, in substance, into the lower conjunctival sac, which can be easily done by placing the salt, with a probe, on the everted lower lid. The patient is kept for half an hour under observation. Dryness in the throat is a usual effect of the application of the drug, which soon passes away; only if further symptoms (congestion to the head, paralysis of the m. protrusor urinæ) should approach, it will be necessary to give to the patient, internally, one-sixth to one-third of a grain, or a subcutaneous injection of one-eighth to one-fourth of a grain of the sulphate of morphine. Though I have but twice been obliged to resort to these means of counteraction, I consider it necessary to have them always on hand.

It will be well to examine the patient some hours after the first application. If the pupil has enlarged considerably, one application daily will soon bring about dilatation, and no further treatment will be necessary, particularly in cases of a non-specific nature. If the enlargement is noticeable, but of little extent, or if there is no change, another application is made with the same care, and the case re-examined the following day. On the second day, those cases which do not present a marked increase of the size of the pupil, are, according to the current rules, subjected to the action of mercury, to depletion, paracentesis of the anterior chamber, or Iridectomy. Those, on the contrary, where the pupil has become larger, are treated with atropine exclusively, and only those where marked constitutional syphilis exists, submitted to a mild mercurial treatment. In this manner a number of patients, in whom it is not easy to determine whether the ocular disease be specific or not, escape the necessity of mercurial medication. I have sometimes found,

in mild cases where syphilis existed, the pupil dilated on the second day, and the inflammation diminished: so that, for experiment's sake, I cured the disease locally, before I submitted the patient to an anti-syphilitic course of treatment. The applications of atropine, in substance, may well, in my opinion, supersede all other modes of using this remedy. Their energy and permanence of effect are incontestable. They irritate the eye less than collyria, and the whole of the remedy used comes into action; their use is more convenient than even that of atropine paper; and the dangers, which also exist when collyria are applied *coup sur coup*, do not fall heavy in the balance.

ON A NEW MODE OF PERFORMING IRIDECTOMY.

By JULIUS HOMBERGER, M.D.

A great difficulty in performing Iridectomy, for the purpose of diminishing intra-ocular pressure, consists in the *removal of the iris to its ciliary insertion.* Another necessity, which is also not easily accomplished in many cases, is the *excision of a large piece* of the iris. If it is necessary to go far beyond the margin of the pupil with the lanceolar knife, in order to get a large corneal wound, the danger arises of injuring the lens, which is considerably pressed forward in glaucoma. Again, the cases are not rare where even experienced assistants do not cut off the iris to the edge, and thus cause a failure of the operation, or make at least its result very doubtful.

It is not my intention to criticize the different modifications which have been invented by Von Graefe, Arlt, Frœbelius, Bowman, and others, with a view to do away with these difficulties. No practical surgeon will deny, that, in spite of all modern propositions, the execution of Iridectomy is still attended by the above-named inconveniences. Therefore, though the method which I am going to describe has not yet stood the test of numerous experiments on living subjects, I do not hesitate to recommend it to the readers of this journal for trial, confiding in the easiness of its execution, and the certain results which it seems to promise.

With a cataract knife, the point of which, directed towards the centre of the globe, is pushed into the sclerotic at a distance of one line from the margin of the cornea, a linear opening is made, which, by merely pushing forward the knife, is lengthened in a radial direction, until the cut reaches three-

quarters of a line beyond the edge of the cornea. During the performance of this cut, the back of the knife does not for one moment leave its direction towards the centre of the eyeball. The knife is then gradually withdrawn, so that the aqueous humor is slowly evacuated. By this first act of the operation, the anterior chamber is opened, and the iris fissured from its ciliary insertion up to a point about half a line distant from its periphery.

The second act of the operation consists in the introduction into the wound of one branch of a fine, but strong, pair of scissors, slightly laterally curved. The point is introduced along the posterior surface of the cornea into the anterior chamber, and the cutting edge of the branch laid into the junction of iris and cornea. With one or two movements of the scissors, a wound is produced corresponding with the size of the piece of the iris which is intended to be removed. It will be necessary, in order to be able to introduce the scissors, to enter first but a little way into the wound made by the knife, and almost rectangularly to the latter, to make way for the branch of the scissors.

In the third act, a common iris-forceps is introduced into the anterior chamber, but not in a diagonal direction, as usually. With the point of the forceps the operator takes hold of that part of the iris next to the angle of the wound, and by a slight traction, in the direction of a tangent, touching the margin of the cornea in the wound, he tears the already fissured iris up to the pupilar margin, and then by continued pulling he severs it from its ciliary insertion. As soon as the iris is thus torn off up to the opposite angle of the corneal wound, the operator himself, or an assistant, removes the separate segment of the iris, with either knife or scissors.

The advantages of this method I wish to condense in the following points, and shall be happy if, by my proposition of a more convenient way of performing Iridectomy, I add a mite to the universal diffusion of this important operation.

1. The opening of the anterior chamber is made in such a way, that the instruments do not in any way come in contact with the pupillary region, and there is, therefore, no danger of wounding the lens.

2. The inner edge of the corneal wound is made with much more certainty in the junction of iris and cornea, than with either knife or lance.

3. The tearing of the iris from its insertion loses, by the previously made fissure in the iris, the danger of dialysis; while it insures, on the other hand, a peripherical pupil with more

certainty than if the iris is cut off after having been dragged out in the manner hitherto practised.

4. The cutting off of the iris may be performed even by assistants of little experience; because, if ill-executed, it does not, as in the usual methods, render it frequently impossible to resume hold of the iris.

Finally, I may be permitted to remark, that I do not consider the division of some fibres of the ciliary muscle (Hancock) of great therapeutical importance; but that I think the angular opening, which allows a part, at least, of the aqueous humor to escape for some time, is very favorable to a gradual diminution of intra-ocular pressure. The importance of a compressive bandage during the after treatment may, by this circumstance, be considerably lessened, or even totally annulled.

NEW YORK ACADEMY OF MEDICINE.

STATED MEETING, April 6, 1864.

DR. JAMES ANDERSON, PRESIDENT, IN THE CHAIR.

CEREBRO-SPINAL MENINGITIS.

Dr. DETMOLD read an account without comment, of a case of cerebro-spinal meningitis, called also spotted fever, occurring under his observation, after which Dr. W. H. Draper read a portion of an interesting paper which he is preparing on the same disease. His paper is founded upon a somewhat lengthy and careful observation, principally in the neighborhood of Carbondale, Pa., where the disease has been raging to a fearful extent. As the paper is not yet completed, no analysis of it can be given at present. Dr. Skiven, of Long Branch, N. J., being present, by invitation, proceeded to address the Academy at some length, giving a minute description of the disease as it appears in his locality. The neighborhood where the disease has occurred with the greatest degree of severity is but a short distance from the sea-shore. The climate during the winter has been mild, there having been no storm from the ocean until some time in the month of March. The ground is generally dry, there being no marshes or swamps that are not covered by the tide. The spring and well water is more or less impregnated with chloride of sodium and the salts of iron. The mode of living is varied, there being no uniform system of diet, either in meats, drinks, or vegetables. The population is composed of different classes, from the poor laborer to those in easy cir-

cumstances; all seem happy and contented, and enjoy life much. From these facts there seems to be no known cause from soil, climate, or mode of living, by which we can account for the appearance of the disease. It was observed that as soon as this disease appeared all other diseases disappeared, or seemed to be swallowed up in this. During last winter, measles prevailed to an extent and degree of severity hitherto unknown. It attacked persons of all ages, from the young child to the old man of seventy. In past years this has invariably been followed by scarlatina; but this year it was not so; upon the disappearance of measles from the neighborhood, cases of cerebro-spinal meningitis began to appear. The first symptom of the disease has generally been a severe pain in the knee, sometimes in the hands, and attended by what the patient describes as "pain in the bones," extending along the direction of the limb. After a short time, or in some instances a day or two, the pain leaves the limbs and attacks the head, from which it extends to the back of the neck, and continues down as far as the lumbar region. This, like the pain in the limbs, is aggravated more by motion than pressure; indeed, every attempt at motion is attended by the most intense pain. If the patient can be seen at the commencement of this stage of the disease, he is bled freely from the arm, leeches applied to the temples and mastoid processes, cups to the back of the neck and along the spine, followed by mustard applications and the administration of a brisk cathartic. Before Dr. S. commenced this treatmen, he lost a majority of his patients; but since he began to bled early, a much greater proportion recover. Later, when stimulants seem to be indicated, he has found equal portions of capsicum and camphor in powder, to be attended with a better effect than any of the diffusible stimulants. The prejudice of the inhabitants is against autopsies, consequently the advantages for studying the pathology of the disease are limited. Dr. S., however, exhibited some specimens, consisting of a portion of the dura mater, one of the stomach, and one of the bladder; these all appeared to be in a very high state of congestion. The spots, from which the disease is sometimes called "spotted fever," Dr. S. regards as accidental, being simply spots of ecchymosis caused by rupture of some of the small vessels during the stage of reaction. It was announced that this subject would be continued at the next meeting, after which the Academy adjourned.

Book Notices.

Lectures on Medical Education, or on the Proper Method of Studying Medicine. By Samuel Chew, M.D., Prof. of Practice and Principles of Medicine and of Clinical Medicine, in the University of Maryland. Philadelphia: Lindsay & Blakiston. 1864.

This is a neat duodecimo volume of 152 pages. It embraces five lectures on the following subjects:—

Lecture I. Introduction—Power of Industry—Whether special Talents for Medicine are necessary—What Talents are requisite—Good Senses—Good Sense—Means for the Study of Medicine.

Lecture II. Reading as a Means of Study—Errors in its Use, &c., &c.

Lecture III. Errors in Reading Continued—Reading without Thinking—Lectures as a Help in the Study of Medicine—Their Utility, &c., &c.

Lecture IV. Clinical Experience—Necessity of a Hospital to every Medical School—Conversation as a Means of Acquiring Knowledge, &c., &c.

Lecture V. Medical Schools—Controversy Respecting them, &c., &c.

It is a pleasant readable book, containing very many useful suggestions to students; and may be read with profit by all who wish to improve their knowledge of medical science and practice. For sale by S. C. Griggs & Co., Lake street, Chicago.

Diseases of the Ear, their Diagnosis and Treatment. A Text-Book of Aural Surgery, in the form of Academical Lectures. By Dr. Anton Von Troltsch, Aural Surgeon and Lecturer in the University, in Wurzburg, Bavaria. Translated from the German and Edited by D. B. St. John Roosa, M.D., Assistant-Surgeon to the New York Eye Infirmary. Illustrated with Wood Engravings. From the Second and last German Edition. New York: Wm. Wood & Co., 61 Walker street. 1864.

This is a well executed volume of 254 pages, on one of the most neglected, and yet one of the most important, departments of practical medicine and surgery. It is a plain practical trea-

tise on diseases of the Ear, in the style of lectures; sufficiently full in details without being prolix, and its practical recommendations characterized by clearness and good sense. The editor, Dr. Roosa, has not only performed the work of translation well, but he has added many valuable paragraphs to the original text. The book is worthy of being purchased and read carefully, by every student and practitioner of medicine.

Tenth Annual Report of the Board of Education, of the City of Chicago; for the year ending Dec. 31st, 1863.

This is a pamphlet of 103 pages, containing the reports of the President of the Board of Education; the Superintendent of Public Instruction; the Principal of the Chicago High School; the Rules of the Board of Education; the list of Schools, Principals, and Assistants, with their Salaries; and a variety of other facts of interest to those engaged in the business of education.

The reports are well written, and give a very full account of the present condition of our liberal and enlightened system of Public Schools.

Editorial.

Illinois State Medical Society.—Before this number of the Examiner will reach its distant readers, the Annual Meeting of this Society will be in Session in this city. We are hoping for, and anticipating a full meeting. The Committee of Arrangements have made their programme for a session of three days at least. The Illinois State Medical Society has gained the reputation abroad, of being one of the most active State organizations in the country. We are confident this reputation will be increased by the results of the present meeting. We shall give a full record of its proceedings in the next number of the Examiner.

The Spring and Summer Term in the Chicago Medical College.—The summer course of instruction in this institution is progressing with regularity and interest. There is a class of excellent young men in attendance, and the advantages they enjoy could hardly be excelled. They have four regular clinics in the Wards of the Mercy Hospital each week, under the charge of Professors Davis and Andrews; two in the College Dispensary, under the care of Professors Andrews and Byford; and one in the Soldiers' Home, under care of Professor Hollister. In addition to these ample facilities for gaining practical knowledge, they have from one to two Lectures and Examinations in the various branches of medical science daily, with dissections, and access to the reading-room and museum of the College.

Mortality among the Internes or Resident Physicians in Hospitals.—We learn from our exchanges that during the past year, and indeed during several of the past years, there has been a large ratio of mortality among those engaged as Internes, Assistants, or resident physicians in the Bellevue Hospital, New York, as well as in some other large general Hospitals. We observe that this high degree of mortality has resulted chiefly from continued fever; and has been attributed, by some, to the admission of many cases of Typhoid and Typhus fevers into the same wards with the sick of other diseases, and the consequent diffusion of the fever poison throughout all departments of such institutions. Without disturbing, at present, the question concerning the specific contagiousness of continued fevers, we are confident that nearly all the mortality among the students and Assistants in Hospitals and Colleges could be prevented by proper attention to matters of personal hygiene. During the last fourteen years we have been on duty constantly as Attending Physician to a General Hospital, into the wards of which, both Typhoid and Typhus fevers are freely admitted. During all the time, either advanced students or recent graduates have been employed as Internes or Assistants, boarding and lodging in the institution; and large classes have

been daily admitted into the wards for clinical instruction. Of all those employed as Internes or resident Assistants, not more than four have suffered attacks of continued fever, and none of them have died. From personal observation, we are satisfied that all those who suffered attacks, neglected free exercise in the open air, and their sleeping-room was in the basement or lower floor of the Hospital. Again, during all the fourteen years past, classes of students varying from 20 to 75 in number, have visited the hospital for clinical instruction, at least four times a week, during each annual period of Medical College instruction. They have surrounded the beds of continued fever patients in every stage of the disease as freely as those of any other class; but in no instance have we been able to trace an attack of fever among them to such intercourse. During the first three years of our connexion with a medical college, we found each year, when about one-third of the session had passed, a considerable number of the students began to complain of the premonitory symptoms of typhoid fever. In only a small proportion of the cases did the disease assume any severe form, and in only one case did it terminate fatally. Its frequent occurrence, however, caused us to inquire carefully concerning the circumstances under which it was developed. We found that in almost every instance the students attacked were lodging in small, ill-ventilated rooms, taking no out-door exercise except simply from their rooms to the college and back, and often reading late at night. The connexion between these circumstances and the attacks of sickness, was so obvious that we have ever since embraced the opportunity, at an early period in each College term, to call the attention of the classes to them, and to insist that every student should take a reasonable amount of active, vigorous exercise in the open air, and keep his lodging room well ventilated. Since we have adopted this course, eleven years of College and Hospital instruction have passed by, and not a single member of the classes attending the institutions with which we are and were connected, has died from continued Fever, whether Typhoid or Typhus. So important do we deem open air exercise for those who are daily

crowding the wards of Hospitals and the Lecture-rooms of Colleges, for instruction, that in selecting a location for the Chicago Medical College building in this city, we purposely placed it at such a distance from the Mercy Hospital as to require a brisk walk of from *ten* to *fifteen* minutes to pass from the clinical wards of the latter to the Lecture-rooms of the former. This walk, often converted by the students into a playful run, most effectually dispels whatever of deleterious miasm or infection they may have imbibed in their contact with the sick. We are fully satisfied that, while every Medical College should embrace an Hospital as a necessary part of its system of medical instruction, a due regard for the health of the classes who attend, forbids that both should be under the same roof. If the medical officers of Hospitals and the faculties of Colleges would more rigidly require active out-door exercise and thorough ventilation of lodging rooms, on the part of internes and students, we are quite sure much sickness and many deaths would be prevented.

The New York Medical Independent and Pharmaceutical Reporter.—This is the title of a new medical Journal published in New York. It is issued every week, and each number contains sixteen pages: Price, two dollars per annum. Publishing-office, 447 Broome Street.

We welcome the *Independent* to our exchange list, and should doubtless welcome the Editors into the field of medical journalism, if we knew who they were.

Preservation of Gum and Starch Paste.—By John M. Maisch. The paste made by gum tragacanth and gum arabic, which is so extensively used by the apothecaries in this country, acquires, particularly during the warm season, a very unpleasant and even offensive odor in consequence of fermentation, which soon commences on exposure to the air. Oil of cloves, alum, and other essential oils and salts, are frequently added to counteract this tendency, with but partial success, the volatile oils merely hiding to a certain degree the offensive odor developed, and retarding the fermentation incompletely. For some time past I have availed myself of the antiseptic property

of creosote, which may be added to these pastes recently made, until its odor is faintly apparent. The result is their perfect preservation, no offensive odor being disengaged, and their adhesiveness is not impaired by keeping them for months.—*Am. Journ. of Pharm.*

Terchloride of Carbon.—Mr. Bryant informs us that at Guy's Hospital the terchloride of carbon has been employed for many years, and that it was a very favorite remedy of the late Mr. Ashton Key, tracing its employment back, therefore, at least fifteen years. As a lotion it has acquired considerable value, and may be looked upon as a stimulant, and in a measure as a disinfectant. In sloughing and fetid ulcers it is of great use. It may be used in the indolent and weak ulcer with general advantage. The usual strength of the lotion is from *m*xx to ʒss of the drug to an ounce of water. It has an agreeable odor and rapid effect. In cases of gangrene, and in sloughing phagedena, it may be employed in its concentrated form with some confidence, a wound thus affected rapidly taking on a more healthy aspect. Upon the whole, it is a very valuable local stimulant, and in Mr. Bryant's estimation ranks above most of the drugs of that class now in use.—*Med. Times and Gaz.* and *Med. News.*

Galvanism in Tetanus.—The celebrated Italian physiologist, Matteucci, has addressed a communication to the French Academy of Sciences upon the employment of the continuous electrical current in the treatment of tetanus; and in a note to M. Flourens he earnestly begs that the attention of physiologists and physicians may be turned to the subject, as he firmly believes that a therapeutical procedure will result, which, if it do not effect a cure in this terrible disease, will, at all events, produce great diminution of suffering. Seeing recently, in an American journal, the fact stated, that the continuous current had been advantageously employed in a case of hydrophobia, he called to mind a case of tetanus published many years since by Nobili and himself. It is well known that a condition of tetanic contraction may be excited under two circumstances, viz., the interrupted passage of the electric current into the nerves and muscles of an animal at very short intervals, and the continuous passage of the current into the nerve in the opposite direction to its ramifications. It has been the object of some of Professor Matteucci's communications in the *Philosophical Transactions*, to explain how this is brought about by

the production of secondary polarities. What, however, we have to do with at present is the fact that a nerve which has in this way acquired the property of exciting tetanic contractions, instantly loses such property as soon as it is submitted anew to a continuous current. Reasoning from analogy, it was thought that tetanus might be assimilated, as regards the state of the nerves, with the condition of an animal in which interrupted currents or a continuous inverse current have been employed; and the hope was entertained that a direct continuous current would produce the cessation or diminution of the contractions in the one case as in the other. And so in effect it was found that the patient, while he was subjected to a continuous electric current from 30 to 40 pairs of plates, no longer suffered the same violent convulsions, and was able to open and shut his mouth. This amelioration continued during several minutes, after when the contractions returned, notwithstanding the passage of the current was suspended awhile, and then reproduced with from 50 to 60 pairs. Amelioration again followed; and these alternations continued during several hours, the salutary effects of the current gradually diminishing, and at last ceasing entirely.—*Med. Times and Gaz.*

Anæsthesia from Chloroform prolonged by the Hypodermic Injection of Morphia.—Translated by Dr. Homburg, Cincinnati. The following observations of Professor Nupbaum, of Munich, are likely to prove of vast importance not only in chirurgical, but also for internal medical treatment, for instance, in reference to the therapy of the tetanus, various neuroses, etc., yea, even in experimental physiology. Since it appears to us desirable that the valuable experiments in question should be confirmed by other surgeons and physicians so that experiments may be had in the most varied manner, we hasten to communicate them briefly, even without waiting for a greater number of cases bearing thereon.

Professor Nupbaum removed, about three weeks ago, from a patient aged forty, a miller, residing in Foelz, a great sarcomatous tumor on the neck, using chloroform in the usual manner. To silence pains after the operation, which required a complete separation of plexus cervicalis, he injected beneath his skin, while still under the influence of chloroform, one grain of acetate of morphine. The person operated upon did not subsequently—as usual—awaken from his narcotism, but slept on, breathing regularly and calmly, uninterruptedly, for twelve hours. He endured during this sleep the deepest stitches of

the needle, incisions into the skin, and the application of red-hot iron, etc., without even the slightest reaction against the same. Finally, he awoke from deep slumber, exactly as if he had just passed through a chloroform narcotism.

A few days later, Prof. Nupbaum most pleasingly surprised at this exhibition, and the effect just stated of subcutaneous application of morphine on a second patient, a Mr. M., in Swabia, upon whom, in consequence of a cancer, he had just executed the resection of the upper maxillary bone without removing the alveolar process during the chloroform narcotism, and had finally, on account of cancerous irritation in the facial skin, undertaken a transplantation in the neighborhood of the temples and forehead by closing the wound. This patient, too, slept with complete absence of all feeling during eight hours amid the most quiet breathing. His pulse remained in rhythm and number perfectly regular. The effect of the narcotic appears the more surprising in this case, because the same dose of acetate of morphine had a few days previous been injected hypodermically without producing sleep, and still less anæsthesia.

Two other cases embrace a woman fifty years old, and a seven year old boy, upon both of whom only about half a grain of morphine had been subcutaneously injected; and both slept from five to six hours the same quiet sleep, and enjoyed an equal anæsthetic condition. Another case, in which the experiment in question failed, has up to now not been observed by Professor Nupbaum.

From the preceding observations appears to arise a physiological experimental point, that must on further use tend doubtlessly to most gratifying results. Obviously it appears as if the hypodermic application of morphine, and perhaps of other narcotics, for instance, of atrophia, might during the chloroform narcose preserve for several (six to twelve) hours that peculiar condition of the central nervous system, of which we know—it is to be lamented—as yet so little, and which is temporarily produced by the effect of inhaled chloroform, and to do this by greater or lesser doses of morphine; as long at least as the effect of morphine is maintained; and, of course also the arracothesy, which to produce through the inhalation of chloroform is, as well known, one of the most beneficent inventions in aid of suffering humanity.—*Cincinnati Lancet & Observer.*

Treatment of Tendinous Rheumatism by the External Employment of Sulphur.—Tendinous rheumatism, according

to Dr. RENARD, differs from acute rheumatism by the absence of the general symptoms, and from the chronic by the presence of local inflammatory symptoms. Dr. Renard suffered from this complaint himself after an attack of acute rheumatism, for which he was copiously bled. The parts affected were the tendons of the hamstring muscles, and no improvement resulted after a long course of diaphoretics, camphor, terebinthinate, and other liniments, and the administration of the solanaceæ. At last Dr. Renard saw a passage in an English medical journal, stating that persons suffering from rheumatism in the legs had only to dust the inside of their stockings with sulphur. He immediately employed this simple remedy, the sulphur being the commercial flowers of brimstone, which contain some sulphurous acid. The curative effect was very well marked, for Dr. Renard walked in the evening, then renewed the sulphur in the stockings before sleeping in them, found himself very much relieved the next morning, and nearly quite cured on the morning after. A few days later, he left off the brimstone, and the pain reappeared in the soles of the feet, but yielded very soon to the reapplication of sulphur. Since the year 1857, when he was first attacked, the same experiment was repeated every winter when he was suffering from chronic tenodynia, either in the hams, the heels, or the elbows. He felt under the influence of the contact of the flowers of brimstone, the skin becoming hotter, slightly excited, and more disposed to sweating; and, as soon as this effect was produced, the relief of the pain seemed to be immediately marked. Whatever may be the explanation of the manner in which sulphur exerts its curative agency, Dr. Renard affirms that it has a beneficial effect upon the rheumatic pains of the tendons, and that this action is the more rapid and certain in proportion as the tendons are more superficial and the sulphur is kept more closely over the painful parts.—*B. & F. Med. Chir. Rev.*, Jan. 1864, from *L'Union Medicale*, April 21, 1863.

TRAUMATIC TETANUS SUCCESSFULLY TREATED WITH CHLOROFORM AND SUBSEQUENT USE OF BELLADONNA.—Dr. L. C. LORD reports (*San Francisco Medical Press*, Oct. 1863) the following case: Some weeks since, in the St. Mary's Hospital in this city, there was admitted a young man with fracture of the os femoris in its upper third; the fracture, which was comminuted in character, was the result of a fall from one of the city cars, while in motion.

The injury was treated by the application of Desault's long-

extending and counter-extending splint. Shortly after the limb was dressed in this manner, tetanic symptoms presented themselves in the form of trismus, which ultimately became general, the whole body being thrown into violent muscular contractions. Soon after the supervention of these symptoms, the patient was put under the influence of chloroform by inhalation. He was maintained in a state of constant anæsthesia for near seven hours, consuming, in the meantime, several ounces of chloroform, administered by means of an inhaler, so constructed, that but a small amount of the article could escape without being breathed. After the use of chloroform for that length of time, the tetanic symptoms so far disappeared, that the inhalation was suspended, and the patient was ordered belladonna; opiates were also given him. On the following day, trismus again ensued, when resort was had again to the chloroform. The closure of the lower jaws was quickly relieved, whereupon the inhalation was discontinued.

The remedy to which I am inclined to refer the rescue of the man's life in this case, was chloroform. The inhalation, as will be perceived, was carried to a much greater extent than usual, or than prudence would dictate in any other than a hopeless case. After the discontinuance of the anæsthetic, the patient presented symptoms of aberration of mind, which were present for several days afterwards, though they gradually became less, and, in a week afterwards, they disappeared. The patient is yet under my charge, in every respect doing well, though time enough has not yet elapsed to have effected entire union of his fractured femur.

Hospital Gangrene.—Dr. Frank H. Hamilton, Jr., Asst. Surg. U. S. A., has given (*American Medical Times*, Oct. 31, 1863) a tabular statement of 33 cases of hospital gangrene which occurred in the McDougal General Hospital. It appears from this table that but two of the cases terminated fatally, and these some days after the gangrene had been arrested. In one of these the patient died from exhaustion, the result of extensive suppuration in the knee-joint, the wound having been in a perfectly healthy condition for several days. In the other the patient died from dysentery, his wound having put on a healthy action two weeks before his disease.

In one case where nitric acid was used, the disease was not arrested, and at the end of ten days it was found necessary to amputate the leg above the knee. The stump healed by the first intention. An analysis of the table shows that the average

duration of all cases, under all treatments, amounts to 12.15 days.

Number treated with nitric acid . .	18
Average duration of disease . . .	16 days.
Number treated with sol. bromine . .	14
Average duration	6.6428 days.
Number treated with iodine . . .	1
Average duration	7 days.

These results are decidedly favorable to bromine.

Varicose Veins.—Mr. Skey remarked (*Lancet*, Jan. 2, 1864) that the treatment of varicose veins involves two objects: "1st, the increase of power to these organs; and 2d, the turning the current of the venous circulation into healthier channels. The first is effected by the liberal administration of nutrio-stimulants. The second object has tested the inventive faculties of many surgeons. I leave it to others to commend the various schemes adopted by them. I discountenance, from long observation of its incompetency to cure, the employment of the needle, whether through the vein or under it, single or double. It has these objections: 1st, it is not unattended with danger; and 2d, it fails to obliterate the vein, except at the point of its application, mainly because the applications cannot be safely made in numbers proportionate to that of the veins affected. I have at present in St. Bartholomew's Hospital a woman under treatment for varicose veins of the leg, whose limb was jeopardized by the employment of the needle a year ago. A long illness, with severe inflammation and extensive abscesses, followed. The same limb is again under treatment for the original disease. There is no danger in making any number of small eschars on the most projecting surfaces of varicose veins, if made with an escharotic composed of two-fifths of pure potash and three-fifths of powdered lime. This powder, well combined, is made into a paste with alcohol. Whether other escharotics are dangerous in their operation on veins, I do not stop to inquire; I only know that the Vienna paste, combined as I have above described it, is not. These eschars may be made in any number proportionate to the extent of the disease. I have treated perhaps 250 cases in the course of the last ten years, and I continue to treat them, by the same means. The paste is applied over the most projecting parts of the vein in the following manner: through a series of about four layers of adhesive plaster a circle is cut of the size of a threepenny-piece or smaller. The influence of the escha-

rotic extends through the vein; and it is curious to observe that from the hour of its application the entire vein appears to be obliterated, and is undetectable to the finger on pressure. From ten to twenty-five eschars may be applied between the ankle and the knee. Twenty minutes suffice for the full operation of the escharotic, and an average of one month for the cure. In very weak constitutions the ulcers will heal very slowly, unless well-directed efforts be made to give force to the general system."

Structure of Indurated Chancre of the Prepuce.—In a paper read before the Biological Society of Paris, M. Ordonez has given the following summary of the appearances observed by him on making a histological examination of indurated chancre. 1. The epidermis is considerably thickened around the ulcerated part. The most superficial cells all present a central nucleus, tolerably large, with from one to four nucleoli; contrary to what is met with in healthy epidermis, where the cells lose their nuclei as they approach the external surface of the skin. 2. The interpapillary digitations in the true skin are larger at the level of the chancre than in the healthy skin. The epithelial cells are very closely packed, larger than in the normal state, and infiltrated by a very transparent fluid, coagulable by alcohol. 3. At the level of the papillary layer of the skin, small hemorrhagic clots may readily be detected, produced, no doubt, by the rupture of the small capillary loops distributed in the papillæ. Hæmatosine, mixed with red corpuscles in various stages of change, is effused in patches, between the papillary and the mucous layers. 4. The meshes of the cutis vera, from the papillary layer to its deepest portion, are infiltrated with a large quantity of plastic lymph. On merely making thin slices of the chancre, a large quantity of a very transparent, slightly viscid fluid, coagulating slowly on contact with the air, may be made to escape by pressure or by the action of the cutting instrument. This liquid, examined microscopically and with the aid of reagents, appears to be plastic lymph, or blastema. 5. The papillæ are increased in size, without being altered in shape. They are infiltrated with a large number of embryonic or transitory elements of the fibrous or connective tissue. These consist of round or oval nuclei, varying in diameter from .00016 to .00028 and .00036 of an inch; of small fusiform, fibro-plastic bodies in an ordinary state of evolution; and of small bundles of fibres of fibrous or connective tissue in progress of formation, and still presenting

nuclei. 6. In the substance of the derma are to be found a number of fibrous cords, with perfectly developed fibres, and presenting a brilliant white aspect, contrasting remarkably with the adjacent tissue. This appearance is best presented by recent sections of the induration, examined by the aid of distilled water; it is also present, but less distinct, in specimens that have been preserved in alcohol or glycerine. M. Ordonez thinks that the alterations in the skin which he has described, satisfactorily explain the peculiar induration characteristic of the infecting chancre.—*Gazette Medicale de Paris*, 11 Octobre, 1863.

Subpubic Puncture of the Bladder.—To avoid the danger of peritonitis, which sometimes follows the operation of puncturing the bladder above the pubes, M. Voillemier has devised the following operation. The patient is placed on his back, with the legs slightly separated; the pelvis is raised by a thick cushion, so as to bring the pubes forward, and to prevent the distended bladder from embarrassing the operator. An assistant, standing at the left side of the patient, draws the penis downwards and backwards. Sitting at the patient's right side, the surgeon feels with his right fore-finger for the suspensory ligament, and with his left hand he introduces by the side of this ligament a trocar, curved so as to pass round the pubic bone. During this stage of the operation, the instrument is carefully supported and guided by the right hand, lest the trocar should turn too suddenly and come into contact with the bone. The canula having entered the bladder, the trocar is withdrawn. The operation was successfully performed by M. Voillemier, in the Hospital St. Louis, on October 14th. The cicatrization of the wound was complete in forty-eight hours; and, at the time of reporting, no trace of the operation remained, beyond a fibrous cord indicating the passage of the instrument.—*Brit. Med. Journ.*, Jan. 23, 1864, from *Gaz. Med. de Paris*, 14 Nov., 1863.

Diet in Diabetes.—Dr. Edward Smith concludes some interesting observations on this subject with the following summary of the proper diet in diabetes:—

1. *Fluids.*—To be limited by degrees daily until they shall not exceed five pounds and a-half in both fluid and solid food. Of this quantity two or three pints should consist of new or skimmed milk, and one pint, or less, of tea. In the cold season and at night they should always be given when hot. Of all alcohols brandy is the best, and may be given with water only,

or added to milk, or beat up with egg and milk, and given several times daily. No fluid should be given in greater quantity than half a pint at a time; and, when milk is reduced in volume by cooking, the daily quantity of fluid must be made up by an additional supply of the same or other fluid.

2. *Solids.*—Dr. Prout's combination of eggs and milk (with sharps substituted for bran) is excellent. Four ounces of sharps and 4 oz. of peas, beans, or lentils may be made into bread or pudding, with milk, or into omelettes with eggs and herbs. Eggs and gelatin may be given when starchy food cannot be altogether intermitted. Eggs, gelatin, cheese, gluten, bread, meat, fat, and oils may be given as largely as they can be digested. The free use of salad oil should be urged, whether in the cooking of fish or flesh, or in the use of water-cress as a salad or drunk alone, so that several ounces may, if possible, be consumed daily; but as there are in all persons preferences and dislikes in reference to particular fats, that kind—whether butter, suet, oil, or fat of meat—should be allowed, which is the most agreeable. Four oz. of sharps, 3 oz. of wheaten flour, 5 oz. of peas, 1 lb. of meat, 2 oz. of cheese, 2 pints of milk, and 3 eggs, will afford more than about 13 oz. of carbon and 1 oz. of nitrogen daily.—*Lancet*, Feb. 6, 1864.

Practicability of Arresting the Development of Epidemic Diseases by the Use of Anti-zymotic Agents.—Dr. Robinson read a paper on this subject before one of the sections of the British Association for the Advancement of Science, at its meeting at New Castle.

The author commenced by referring to the circumstance of the analogy between many of the phenomena of fevers and other zymotic diseases, and the ordinary process of fermentation having been perceived and recognized by Hippocrates and the oldest writers on medicine. Their idea was that a poisonous ferment, existing in the atmosphere, entered the mass of blood and induced in it a series of changes, which gave rise to the excessive heat, and other peculiarities of that class of diseases —at the present time, this doctrine, modified by the discoveries of Liebig and other chemists, has been adopted by most physicians, and forms the basis of the classification of disease framed by Dr. Farr, and used by the Registrar-General. It thus supposes living germs to exist in the atmosphere, which, when introduced into the body, give rise to a specific and regular series of morbid actions, pursuing a definite course in a definite time, as in small-pox—those germs being disclosed and

multiplied, and producing others capable of reproducing in other bodies the same succession of changes—other lethologists have supposed that the atmospheric poison acts on the blood chemically, by giving rise to what may be termed catalytic actions—while the author is disposed to believe, from what he saw during the cholera epidemic in Newcastle in 1853, that some of these volatile organic matters in the atmosphere are capable of acting on the human body as direct poisons, and that this inanimate volatile poisonous matter also furnishes nutrition to the organic germs suspended in the air. After these preliminary remarks, he proceeded to refer briefly to a number of scattered facts, which seemed to him to indicate the existence of a great principle, which might hereafter be found applicable to the prevention or mitigation of epidemic diseases by the direct use of substances capable of arresting the process of morbific fermentation. He mentioned the following facts as converging to this conclusion: 1. Antiseptic substances, ranging from simple innocuous matters, such as sugar, up to the powerful metallic poisons, such as corrosive sublimate, and forming a very numerous and diversified group, have long been known to be capable of arresting the putrefaction of animal and vegetable structures. 2. The same substances prevent the formation of fungi, as is seen in the use of solutions of metallic salts in the taxidermy in the prevention of dry rot, &c. 3. Many of those agents are known to arrest at once the process of fermentation, as, for instance, sulphurous acid, and Emi and other chemists have observed under the microscope the rapid stoppage of the vitality of the yeast plant when a solution of arsenious acid was added to the fermenting liquor. 4. The formation of the fungus in and on the plant, which causes the vine disease, is prevented by applying sulphur to the affected vines. 5. In Cornwall it is believed that the arsenical fumes from the tin-calcining furnaces exercised an influence over the potato-plants in the neighborhood, which preserved them from the disease then affecting other parts of the same county. [A statement to this effect, signed by Captain Charles Thomas, Sen., of Dolwath, and sixteen cottagers, was here read.] 6. It has been found that when a species of fermentation has taken place in the human stomach, resulting in the development in large quantities of a minute organism (the sarcina ventriculi), this morbid action can be controlled and stopped by the direct anti-zymotic influence of certain salts, such as sulphate of soda, in doses perfectly compatible with the patient's safety. 7. In different parts of the world, among different races, a belief has

long existed that certain antiseptic substances, of which arsenic may be taken as the type, are capable of acting as antidotes or preservative and curative agencies against atmospheric and other poisons, and in some cases that popular belief has proved to be well-founded. The experience of the multitude discovered the value of arsenic as a cure for ague long before it was recognized as such by physicians. The arsenical fumes of certain works in Cornwall were stated by the late Dr. Paris to have stopped the ague, previously endemic there. More recently it has been stated that the arsenic eaters of Styria are peculiarly exempt from fevers and other epidemic diseases. And in India the natives have long used arsenic as an antidote for the poison of snakes. Dr. Robinson concluded by expressing a belief that these scattered observations were not only sufficient to justify and necessitate further inquiries in this direction, but seemed in themselves to shadow forth the outline of a great law which might at some future time be productive of immense benefit to mankind.—*Med. Times and Gazette*, Sept. 26, 1863.

The Origin of Cow Pox and the Nature of Vaccine Virus.—Investigation on this subject in the Paris Academy of Medicine, has led to the following conclusions:—

1st. That vaccine virus (as a thing separate and apart) has no existence.

2d. That the pretended vaccine virus, which we consider as antagonistic to, and neutralizing the variolus virus itself.

3d. That the equine and bovine species are subject to an eruptive malady, which is identical as regards its nature, with variola of the human species.

4th. It is demonstrated that the same is the fact as regards several other species of animals, pigs, sheep, dogs, goats, apes, etc.

5th. The local and general phenomena with animals is the same as those observed in man. The only difference as regards the pustules are those which depend on the structure of the skin and the number of the hairs.

6th. As in the human species, so in the equine and bovine, variola may appear sporadically or epidemically.

7th. From the horse we may inoculate the cow, and reciprocally.

8th. From the cow we may inoculate, without difficulty, individuals of the human species, provided they have not had spontaneous or inoculated variola.

9th. The cow, the horse, and several other species may be inoculated with variolus matter from the human species.

10th. When a variolus epidemic occurs among men, it often extends itself, by contagion, to other animals.

11th. An epidemic of variola may commence among animals, and extend to man.

12th. Inoculated variola produces a much less degree of general reaction, than does variola developed by contagion. This is true in both man and lower animals.

13th. The pustules which result from inoculated variola, are often limited to the points inoculated.

14th. When a secondary eruption is produced, it is almost always insignificant, and composed of a small number of pustules.

15th. In a general manner we may say that the variola of animals is more discrete, and less severe, than that of the human species.

16th. That the dangers of inoculation of variola in man have been much exaggerated. The unprejudiced study of what has been written on this subject will convince of this.

17th. It is probable that animals, as man, are subject to aphthous eruptions.

18th. But the *maladie aphtheuse*, as it is described by writers on veterinary medicine, is nothing else than variola.—*Medico Chirurgical Review.*

Divided Tendo-Achillis united by Silver Wire.—Dr. G. L. Simmons, of Sacramento, relates (*Pacific Med. and Surg. Journ.*, Jan. 1864) a case in which the tendo-Achillis of a man was completely severed accidentally about an inch from its attachment. Dr. S. found the upper edge of the cut tendon retracted an inch and a quarter into its sheath. Dr. S. flexed the limb, drew down the retracted tendon by strong forceps, and united the cut ends with a large-sized silver ligature; the leg was kept flexed for a few days with adhesive straps, after which the usual slipper and dog-collar were used. In a few weeks the patient was able to walk in a high-heeled shoe with but little pain. Scarcely any stiffness resulted from the injury, and at the date of the report he could walk freely with the slightest perceptible halt. The "propriety of using silver wire in uniting tendons," Dr. S. says, "can hardly be questioned. In the above case the result was all that could be desired; and, although position alone might possibly have accomplished the same end in the same time, yet it is probable that the perfect

approximation of the parts by the ligature assisted in defining the bond of union until it became strong. In this case, after the uniting mass was perfected, I removed the silver wire, as the play of the tendon caused the foreign body to slightly irritate the neighboring tissues.

Treatment of Whooping Cough by Belladonna and Sulphate of Zinc.—E. Garraway, writing of whooping cough, says:—The preponderance of opinion is in favor of its being a nervous disorder; and appears to have as much claim to be so considered as asthma, chorea, epilepsy, or other convulsive disorders which it has been impossible to localize.

The treatment by belladonna and sulphate of zinc, in some fifty or sixty cases, was entirely successful: it was given in extract, either diffused in water with the zinc, with sufficient syrup to make it agreeable to children, or, to those who were old enough, in pills;—the dose being from one-sixth to one-fourth of a grain, of extract of belladonna, and half a grain of zinc, three or four times a day, steadily increasing the amount till, at the end of three weeks, children would be taking from four to six grains of belladonna, and twice that quantity of sulphate of zinc, daily.

So far as investigations went, it would appear that both the tolerance of the remedy and the speedy subsidence of the disorder, were in inverse proportion to the age of the subject—a child eight or ten months old bearing much larger proportionate doses, than one from eight to ten years.

When the pupils have become dilated, the dose was diminished for a few days.—*Lancet.*

Digitalis in the Treatment of Epilepsy.—A nursing child, not quite two years old, was brought to Prof. Clark's clinic, to be treated for "fits," from which it had suffered for the last twelve months, occurring every three or four weeks, limited to one a day, though on one day it had seven.

The character of the disease was evidently epileptic, and Professor Clark determined to give the digitalis a trial. The child was accordingly put upon one drop of the tincture three times a day, with directions to increase the dose gradually, as circumstances might indicate. No attack occurred, however, since commencing with the tincture, one drop of which had been taken regularly, three times a day, until four months had elapsed, when the child was last seen at the clinic.

Prof. Van der Kock has had some success in the treatment

of epilepsy, by applying cupping glasses, with scarification, or leeches, to the back of the neck, followed by seton, or issue, with a view to moderate the exalted sensibility of the medulla oblongata, and prescribing internally the infusion of digitalis, with small doses of tartar emetic, if the patient can bear them without nausea, to moderate still further the excited vascular action; but he says he never succeeded in curing a case with digitalis alone, though he believes it contributes much towards promoting the cure.—*Cincinnati Lancet & Observer.*

Oxygen Gas.—At a recent meeting of the Academy of Sciences at Munich, Baron Liebig recounted various experiments which proved clearly that oxygen is not only evolved from the atmosphere by plants, but also in tolerably large quantities by decomposition of water in the bodies of flesh-eating animals. He thinks that a knowledge of this fact will throw quite a new light on the processes of nutrition and digestion.—*London Lancet.*

Professor Trousseau on Aphasia.—This popular professor, in one of his late clinical lectures at the Hotel Dieu of Paris, dwelt on a peculiar complaint, the symptoms of which are the inability in the patient pronouncing certain words, and of expressing his thoughts, retaining at the same time the full use of his intellectual faculties. M. Broca, who first directed attention to this malady, called it *aphœmia*, which term M. Trousseau, aided by the celebrated philologist, Littre, considers wrong, as it really means "bad repute." *Aphasia* is better.—*Ib.*

SYMPTOMS OF POISONING FOLLOWING A DOSE OF DISULPHATE OF QUININE.

To the Editor of The London Lancet.

Sir:—I beg to forward the accompanying case, as I think it may prove interesting to many members of the profession:—

I was called in great haste one evening to a case of supposed poisoning. On arriving at the house, I found the man much better, but thought it safer to administer an emetic. On making inquiries, I found that he had prescribed for himself a mixture of sarsaparilla and quinine, which he had purchased from a druggist. The symptoms of poisoning came on after the first dose of this mixture: within a few minutes there was severe pain and burning in the stomach; the face swelled; the

mouth felt drawn forwards; then the legs and body swelled, and became very red, with intolerable itching, followed by a rash of urticaria. I thought it possible that some poison had become accidentally mixed with his mixture, and so the case rested for a time. However, shortly afterwards the man had an attack of pneumonia, and during his convalescence quinine was prescribed. Upon taking the first dose (two-thirds of a grain, Howard's), all the symptoms above described came on, clearly proving that the quinine was the original cause of the mischief.

I think this case interesting from the singularity and violence of the symptoms produced by so small a dose, and also as showing how a druggist may be unjustly blamed from an idiosyncrasy of a patient.

I am, Sir, your obedient servant,

E. H. ROE.

UTERINE ACTION DURING SLEEP.

To the Editor of The London Lancet.

Sir:—I have read with great interest Dr. Palfrey's case in reference to the above subject, and, in confirmation of his opinion, beg to forward you the following statement:—

I was called on the morning of the 20th of October last to see a lady in her second confinement. Her residence being within a few doors of my own, no time was lost in visiting her. I found the child's head resting upon the perineum, and in a few minutes she was safely delivered of a fine healthy son. On going to bed the previous night she felt quite well, and had no intimation of the event about to take place, except a slight discharge, of which she took no great notice.

In this case, there is no doubt that the whole stage of dilatation, and partly that of expulsion, had taken place during sleep, as from her awaking until the birth of the child no longer period than half an hour could have elapsed. Her first confinement some twelve months previously had been very severe, occupying some forty-eight hours, with delivery by forceps. In this instance there were only three or four labor pains, and no after-pains whatever.

I am, Sir, your obedient servant,

JOHN HARVEY, M.D.

CHICAGO MEDICAL COLLEGE.

Medical Department of Lind University.

The regular Annual Lecture Term in this Institution will commence on the second Monday in October, and continue until the first Tuesday in March following. Clinical Lectures *daily* throughout the term.

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J. S. JEWELL, M.D., Professor of Descriptive Anatomy.
H. A. JOHNSON, M.D., Professor of Physiology and Histology.
J. H. HOLLISTER, M.D., Professor of Materia Medica and Therapeutics.
HENRY WING, M.D., Professor of General Pathology and Public Hygiene.
F. MAHLA, Ph. D., Professor of Inorganic Chemistry.
EDMUND ANDREWS, M.D., Professor of Principles and Practice of Surgery, and of Military Surgery.
RALPH N. ISHAM, M.D., Professor of Surgical Anatomy and Operations of Surgery.
W. H. BYFORD, M.D., Professor of Obstetrics and Diseases of Women and Children.
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J. S. JEWELL, M.D., Demonstrator of Anatomy.

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THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., Editor.

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Original Contributions.

ARTICLE XXIII.

REPORT OF COMMITTEE ON PRACTICAL MEDICINE.

By N. S. DAVIS, M.D., Prof. of Practical and Clinical Medicine.

Presented to the Illinois State Medical Society, May, 1864.

By the constitution, it is made the duty of the Committee on Practical Medicine to report at each Annual Meeting of the Society on such epidemic diseases as may have prevailed, and on such improvements in the department of Practical Medicine as may have been made in this State during the preceding year. In regard to such epidemics as have prevailed within the limits of this State during the past year, your Committee have not as full information as is desirable. Those chiefly worthy of attention are erysipelas and cerebro-spinal meningitis or Spotted Fever. In the city of Chicago, sporadic cases of erysipelas occurred rather more frequently than usual during all the summer of 1863. During the month of September, the cases became so much more numerous as to attract the attention of the profession; and from that time to the first of March the prevalence of the disease was such as to fully merit the title of epidemic. During the six months ending March 1st, 1864, twenty-one cases of this disease were admitted into the medical wards of the Mercy Hospital. In nearly all of these cases the disease commenced with rigors and all the ordinary symptoms

of continued fever, with some soreness of the fauces. In from one to three days, the erysipelatous inflammation made its appearance on the face—generally near the alæ nasi—though in a few cases it commenced at the lobe of the ear. It usually spread rapidly over the entire face and scalp, and, in a few cases, down the neck to the upper part of the trunk. In most of the cases there was much tumefaction of the face, extensive vesications, and, in three cases, suppuration in the cellular tissue of the eyelids. Nearly all of these patients come from the poorer classes of society in the city, and had been laboring under the disease from two to five days before their admission. The grade of fever accompanying these cases was decidedly typhoid; the pulse being frequent, soft, and quick; the skin dry; the inflamed surface and fauces dark red; mind dull and sometimes wandering; the tongue covered with a redish-brown coat and inclined to be dry; urine dark and scanty; and the bowels easily moved.

In a few cases the stomach was irritable, but not generally; and in four of the most severe cases there were frequent intestinal discharges of a thin redish-brown character.

Treatment.—The four cases last mentioned were treated exclusively with sulphite of lime in doses of from half a drachm to a drachm, repeated every two hours during the first day, and subsequently every three or four hours, until convalescence was established. To control the intestinal irritation, a teaspoonful of the following emulsion was given between each of the doses of sulphite of lime, viz.:—

℞. Ol. Terebinth . . ℥jj
Tinct. Opii . . . ℥jj
Pulv. G. Acaciæ, Sacchar. Alba } āā ℥jjj—Rub together.
And add—Aqua Menthæ . . ℥jj—Mix.

All the other cases were treated almost exclusively with the tinct. ferri chloridi, in doses of from 20 to 30 drops, repeated every two hours until the external inflammation ceased to spread, and then every three or four hours, until convalesence was established. In three or four cases in which there was trouble-

some gastric irritation at the time of admission, the treatment was commenced with four or five alterative doses of calomel with morphine.

In a few cases, moderate doses of quinine and opium were given to procure more rest at night. In all the cases, nourishment, in the form of animal broths or milk, was regularly administered, but no diffusable stimulants except tea or coffee. The time required to establish convalescence, varied from four to twelve days.

In fourteen of the twenty-one cases, the recovery after convalescence was rapid and attended by no unpleasant sequelæ. In the remaining seven it was more slow and tedious. Two had small cellular abscesses in the eyelids; one, a very protracted ottorrhœa, with partial deafness and giddiness; and one had three distinct relapses or renewals of the erysipelatous inflammation, each time extending over the face, ears, and mastoid spaces. No deaths occurred from this disease in the Hospital. During the time the foregoing cases were under treatment in the Hospital, namely, the six months ending with the first of March, 1864, there came under my care, in private practice, in this city, forty-five additional cases of erysipelas. These were treated in the same manner as those admitted into the Hospital, and all except one recovered. The case that terminated fatally, was a female child only *four weeks* old. The erysipelatous inflammation attacked the vulva and nates, from which it extended gradually over the entire cutaneous surface, from the toes to the top of the head. It was accompanied by both vomiting and diarrhœa. It terminated fatally in eight or nine days after the attack. The whole number of cases that occurred in the city, during this epidemic, we have no means of ascertaining.

Causes.—No department of medical investigations is environed with more difficulties than that of etiology. Some have attributed the unusual prevalence of erysipelas in this city, during the past autumn and winter, to the impure and offensive condition of the Chicago river. It is certainly a fact, that, at the time the erysipelas became sufficiently prevalent to

attract attention, the Chicago river was in an extremely offensive state. The pork and beef-packing business had commenced, and sufficient blood and offal had been precipitated into the river, in connexion with the ordinary sewerage matter, to render the whole water in the channel a dark redish-brown color, and to cause the emission of a putrefactive odor, perceptibly tainting the atmosphere to the extent of half a mile from the stream. From a careful inquiry concerning the particular parts of the city in which the cases were located, Prof. E. ANDREWS came to the conclusion that much the larger number occurred in streets approximating the river; while the few cases, occurring in parts of the city remote from the river, were mostly in persons whose places of business were on or near that stream. These facts point directly to the conclusion that the poisonous and offensive effluvia from the river constituted the efficient cause of the erysipelas. On the other hand, a more extended investigation shows that sporadic cases of erysipelas had been occurring in the city during all the last half of summer, and were becoming more frequent before the meat-packing season had commenced. We are also informed that the same disease has prevailed more than usual in several places in the interior of the State. Hence we were led to infer that, while the bad condition of the Chicago river and of the water supplied to families throughout the city, may have increased the prevalence and severity of the disease, they were not the primary causes of it.

From all the facts we have been able to gather, we are much disposed to think that the prevalence of erysipelas has been only one of the manifestations of a general or wide-spread epidemic influence, disposing to diseases of a decidedly *Typhus* type.

This view is confirmed by the fact, that, coincidently with the prevalence of erysipelas in this city, the Typhoid, Typhus, and Puerpural fevers, have also been unusually prevalent. Thus, during the six months ending March 1st, 1864, there were admitted, into the medical wards of the Mercy Hospital, *fifty* well-marked cases of Typhoid fever. Of these, six died

and forty-four recovered. Of the six fatal cases, one was moribund at the time of admission, and died in twenty-four hours; there were admitted in the advanced stage of the disease, complicated with extensive pulmonary infiltration, and died during the first week after admission. The remaining two were under treatment, one thirty-eight and the other fifty-six days. Both died from local complications.

During the same period of time, there came under my care in private practice sixty-three cases of the same disease, of which two terminated fatally.

These figures certainly indicate a numerical prevalence of Typhoid fever in this city, considerably above the average for a series of years. Both from my own observation and from information furnished by other practitioners in the city, I am satisfied that true puerpural fever has also been much more prevalent during all the past winter than usual; and many of the cases have terminated fatally. Only five well-marked cases of this disease have occurred in my own practice, of which one died on the third day after the attack, and the remaining four recovered. About the same time that erysipelas was most prevalent, and when the water in the river and that furnished to the city through the hydraulic works, was extremely impure and offensive, namely, during the last half of October and the first of November, there occurred quite a number of cases of sickness of an unusual character, and a large proportion of which terminated speedily fatal.

Nearly all of these cases commenced with a harassing cough, moderate soreness in the air passages from the larynx to the bronchial ramifications, and a great sense of weakness or weariness. The pulse, during this stage, was not much disturbed, neither was the skin hot or dry; and the patients were able to be up and dressed. After these symptoms had continued from three to five or six days, there supervened suddenly a great sense of oppression across the chest, with great dyspnœa; a rapid pulse; cool extremities, and a rapidly accumulating tenacious mucus in the air passages. In six or eight of these cases the dyspnœa and apparent exhaustion increased so rapidly

as to induce death by apnœa in from eighteen to twenty-four hours. Several of the cases occurred in good families, and in an advanced stage of pregnancy. These circumstances, with the unusual character and rapid progress of the attacks, caused them to attract much attention. What was the nature of these cases? Was it erysipelatous inflammation attacking primarily the mucous membrane of the bronchial tubes, and subsequently extending by continuity to the air-cells, inducing universal capillary congestion of the lungs and consequent suffocation?

I think so, although no opportunities could be obtained for making *post mortem* examinations.

Cerebro-Spinal Meningitis—Spotted Fever.—During the past year, and particularly during the last six months, a disease of rapid progress, and attended by a high ratio of mortality, has made its appearance in several localities in this State. There has been much diversity of opinion in regard to its nature, some regarding it as a specific local inflammation of the meninges of the base of the brain and of the medulla oblongata; some as a malignant form of scarlatina; while still others regard it as identical with the Spotted Fever or Sinking Typhus that prevailed in New-England extensively half a century since. It seems to have prevailed most in rural districts, and chiefly, thus far, in the central and southern parts of this State. Its attacks are not restricted to any class, sex, or age, although it seems to occur most frequently among the young. From the descriptions given by different practitioners whose opportunities for observation have been good, the disease varies in different localities, and in different cases in the same locality.

The following letter from my colleague, Prof. J. S. Jewell, will give an account of the disease as it prevailed in one of the most southern localities in the State. This letter is as follows:

Chicago, *May 2nd*, 1864.

Prof. N. S. Davis:

Dear Sir:—I give you, cheerfully, such information as I may have, in relation to the prevalence of epidemics, within the limits of this State.

During the past year, I have partially witnessed, and from

others have learned, of two epidemics, one of "cerebro-spinal meningitis" or "spotted fever," as it is called; the other succeeding it, of erysipelas. The former occurred during the latter part of the winter of 1862 and '3, and in the spring which succeeded it,—since which time it has almost if not quite disappeared, with the exception that it reappeared last winter in a few localities, thus evincing a disposition to prevail during the winter, and to subside on the approach of warm weather; the *latter* during the summer of the year 1863, and especially during the autumn and winter succeeding,—the cases of the disease (*erysipelas*) multiplying as the season advanced, until by or before midwinter it raged in some localities with epidemic violence. In the latter part of the winter, the disease declined until at the present time it cannot be said to exist as an epidemic.

The district of country to which I refer, is in the southern part of the State, about 60 or 70 miles from Cairo, to the N.E. in the county of Williamson, and others adjoining, in a part of the country as a general thing level and somewhat low, though occasionally broken—furrowed by sluggish streams, which are frequently bordered by extensive alluvial bottoms, with marshes interspersed here and there, and as a general thing heavily timbered, except when removed for the purposes of agriculture or interrupted by occasional oak openings, or barrens, and small prairies.

Except during the wet season, the streams seldom run. The water employed for domestic purposes, is mostly obtained from cisterns, which all the rains of the year contribute to supply; or from wells, the water from which is in almost all cases impregnated with salts, obtained in the clays and soils through which it passes, known amongst the people as "hard water."

The district to which reference is had, presents, in a geological point of view, the sandstone formations, immediately overlaid by the coal measures and carboniferous shales, which in many cases lie so superficial as to be exposed—occasional masses of limestone—hard retentive clays—drift and alluvium.

It may not be improper to state that between the years of

1852 and 1855 an epidemic of erysipelatous ophthalmia occurred throughout that section of country, but few persons escaping an attack, and in many cases attended by the most deplorable results. In conjunction with this, miasmatic fevers prevailed to an extent never known there before,—this latter form of trouble reaching its highest degree of prevalence in 1855; and from this period to 1857, the autumnal fevers were almost the sole representations of this class of disease. From the period last mentioned, a transition from the periodical to the continued type of fevers occurred, until, in the course of two or three years, fevers of a continued type almost entirely supplanted the autumnal fevers. This state of things remained until, within the past year, a *return* is indicated to what may in general terms be called a more sthenic type, with an increased number of cases of miasmatic disorder, with the notable exceptions I have referred to in speaking of the epidemics, and a general tendency, exhibited in many cases and in different kinds of disease, in strict conformity with the plainer manifestations of epidemic influence.

Many of the cases of "spotted fever" which *first occurred*, were variously supposed to be inflammation of the brain, "sun-stroke," &c.; and it was not until some time had elapsed that its true character was apprehended. The disease naturally excited the utmost interest amongst both physicians and people. Most of the cases which *first* occurred, died—many of them too speedily to admit of any remedial action. It was not till some time after the advent of this disease that I had an opportunity of witnessing it. I have seen some eight cases in all, most of them, at some period in their progress, under my care. They were all violent cases, and, with two exceptions, all died, one or two without *any* medication.

I cannot, within the limits of this letter, detail cases, but can only give briefly the results of my observations. Since I commenced writing this, I have received, according to request, a communication from Drs. Lodge and Samuels, of Williamson County, who have practised in the midst of the epidemics, and who have kindly furnished me the results of their observations and experience.

All ages and both sexes fell victims to the disease. Children, however, seemed most liable to it. I did not observe that any marked premonitory symptoms served to show its approach. Drs. Lodge and Samuels noticed, however, pain along the course of the facial nerve and in the back of the head, with a slight redness of the eyes and intolerance to light as the earliest symptoms;—the person, as a general thing, feeling usually well, until at or about the period of attack, which, so far as I have seen, is ushered in by a chill—the duration of which varied from 30 minutes to 3 hours. In all the cases I observed, reaction followed, varying much in intensity, and more characterised by *excitement* than *strength*. Drs. Lodge and Samuels, however, saw cases where death occurred without reaction, the chill presenting to them the characteristics the *same* as in "pernicious fever." Sometimes the pulse was full, and but little accelerated. In the majority of cases, however, it was accelerated and diminished in strength—sometimes in volume.

There was nothing remarkable in the appearance either of the countenance or general surface—in most cases at *first*, and in some at no time. In *some*—perhaps *most* cases—at some period in the course of the disease, spots could be observed, neither regular as to the time nor place of their occurrence, and generally on those parts most remote from the central organs of circulation. However, they appeared sometimes on the trunk; and, if so, most frequently about the neck, breast, and shoulders. They were not permanent, and seemed to indicate *deficient capillary* circulation. With the exceptions mentioned, the circulatory system presented nothing remarkable; and in one case I observed, till death took place, the heart acted well and did not *cease* to act, until one or two minutes after respiration had ceased. The expression of countenance, if not that of distress, was dull and expressionless, or disfigured by convulsive action of the muscles of face. After the chill, the heat of surface was almost always above what is natural (till death in some cases); in others the heat of surface passed away, and generally with profuse perspiration.

As to the muscular system, there was generally restlessness

from the beginning, followed by various irregular movements, and which, as the disease advanced with indications of coma, were increased to a greater or less degree in violence, especially in the case of children, where severe convulsions frequently occurred,—the attack varying in duration and frequency.

There were also permanent spasms of the voluntary muscles in all cases I saw, which affected *first* the extensor muscles of the back, subsequently the flexors of the limbs. The head, in most all cases, was thrown back, and *violently* so, after the full advent of the disease, and in one case remaining *so* till the end of the third week or longer. Of the muscles of the eyeball, the superior and internal recti-muscles were almost invariably contracted. According to Drs. Lodge and Samuels, the tongue was kept in constant motion, as if to remove something from the mouth. Of the muscles of respiration, the diaphragm was most frequently affected, the respiratory movements being thoracic. I had no particular evidence of trouble in the case of those muscles, supposed to be under the control of the organic nervous system. There was also, as I omitted to state, spasm of the muscles of mastication, and of the muscles of deglutition, in some cases, so that swallowing was difficult or impossible. Both sides of the body seemed in such cases equally affected. Tongue coated—whitish coat, but moist; bowels either constipated, or in good state; in other respects, nothing remarkable concerning digestive system. The secretions did not vary, in a general way, in any remarkable respect from the same in health. I regret to say I did not examine the urine, from want of proper facilities. Drs. Lodge and Samuels, however, observed it as scanty, at the outset, in many cases, and high-colored, and subsequently more copious, with an ammoniacal odor, and sometimes loaded with albumen.

As to the symptoms referable to the nervous system, they were by far the most important and significant.

There was in all cases pain in the head—generally in the back part—and extending down the neck and back, and occasionally excruciating in its character. Restlessness and delirium, or a disposition to it, which in most cases rapidly

increased, were the most prominent symptoms, at the beginning of the attack—the restlessness increasing until the occurrence of convulsive movements of various degrees of violence. The delirium in most cases increased rapidly, and was succeeded by coma. The delirium was in some cases furious—dilated pupils —(though Drs. Lodge and Samuels sometimes saw them contracted)—heavy stertorous breathing, or, in some cases, short and hurried, and sibilant or *hissing* respiration, much increased by a rapid accumulation in the throat of mucus. Before loss of consciousness, there was frequently double vision, ringing and roaring sounds in the ears, with impairment, in various degrees, of the special senses. The order in which these latter symptoms sometimes occur, may be illustrated by reference to a case.

When I first saw the patient, he had been sick but two or three hours, and was, at the time referred to, partially conscious. Would respond, but not readily, to a question asked him; special and general sensation seemed not much impaired; in a few minutes he could not hear, as was evinced by calling him loudly. The pupils of the eyes were now much dilated, and did not respond to a strong light; nasal passages insensible to carb. of ammonia; and lips and tongue, to the tr. capsicum. General sensation seemed, if not gone, much impaired; and spasmodic muscular movements—ceased first in the upper, *last* in the lower, extremities—and in both sides simultaneously. Diaphragm apparently ceased to act. A few attempts at purely thoracic respiration was made, and the patient ceased to breathe. The heart, however, continued to act well to this period, and did not cease to act until nearly two minutes after respiration ceased. This, however, was not always, even in rapidly fatal cases, the manner of procedure. In nearly all cases, the *motor* function was *first* involved; the sensory *last*, and in various ways and degrees. In one case I observed increased sensitiveness of the surface, from the commencement of the attack until the end. The case recovered. In other cases, for a time, apparently, Drs. Lodge and Samuels observed the same in *most* of their cases.

The manner in which the symptoms referable to the nervous system occurred, left the impression on my mind that on the great ganglia at the base of the brain, but especially the medulla oblongata and the adjacent membranes, was expended the chief influence of the morbific agent, whatsoever it may be; and in most cases from *this*, as a centre, the unhealthy action invaded the spinal cord, on the one hand, and the brain proper on the other.

The course of the disease was most always rapid; though it might, in the more favorable cases, continue for weeks to terminate either fatally, in the end, as it frequently did, or in a slow recovery. Drs. Lodge and Samuels saw cases in which the disease, or its legitimate effects, remained for months before death or recovery. The prognosis, as I witnessed, was in almost all cases unfavorable, even after recovery seemed in view; but the physicians above-named were disposed to take a more favorable view from their experience. They distinguish two forms of the disease—one mild, without severe symptoms—referable to the nervous system, but in other respects resembling the more *severe* form of the disease. This latter form with them, as with others, has proved almost unmanageable, *unless seen early*, when there seems to be a much better chance for benefit. In the worst cases, from a state of apparent health the patient would experience the attack, and sometimes, in the space of two or three hours, would be dead. The disease appeared to be complicated with malarious influence, and most of the cases of any duration exhibited a decided periodical tendency. This seems to have been the case in an especial manner in the practice of the above-named physicians, and in the milder cases particularly. The epidemic, as they observed it, appeared in its greatest virulence in one of the most malarious districts in the range of their practice. The two epidemics (spotted fever and erysipelas) were commingled in the practice of these gentlemen occurring at the same time and in the same place, inducing in them the opinion that the two forms of disease were connected by some link common to both.

No opportunity, so far as I am aware, has been offered any

one there to make an examination of the dead body. I had none. I examined slightly the blood of *one* patient, in particular. The most remarkable condition was the firmness of the coagulum and thickness of the fibrinous or *buffy coat* which, in a clot of two inches in thickness, occupied ¼ or ⅓ the entire thickness of the same.

The treatment found most beneficial consisted in outward applications of a highly stimulating character throughout the entire length of the spine, such as a saturated solution of camphor in oil of turpentine, blisters to the back of the neck and head, warm applications to the extremities, attention to the state of the bowels, alterative doses of mercury, in conjunction with camphor, valerian, ipecacuanha, nitrate potash, &c., and in a few cases quinia—particularly in those cases exhibiting a tendency to periodicity and at an early period in the disease. The quinia did not seem to answer in all cases, and in none so well in the latter stages of the disease as in the earlier.

In *all* the cases, whether mild or severe, Drs. Lodge and Samuels had occasion to treat, the *quinia* in *large* doses, in combination with full doses of *morphia*, seemed to be the most successful mode of treatment. After they had tried a long list of remedies—most all without any apparent benefit—the quinia and morphine are selected as the most efficient agents in its treatment. In some cases, however, it seemed of no avail. Brandy, wine, spts. nit. dulc., &c., were well borne, and in a general way all such measures as had a tendency to support and stimulate the nervous centres, in conjunction with *severe* revulsive measures, such seemed to be the most successful course for the onset of the disease; but, in cases of any duration, such treatment was not the most beneficial, after a few days, requiring a course more distinctly alterative and less stimulating, as some of the cases seemed to become acute, somewhat in character, if they passed on for several days or weeks, calling for a course of treatment much the same as that indicated in the latter stages of an attack of inflammation of the brain, with this difference, that the use of stimulants could not be dispensed with, though restricted in their use. Iodide

potassium and stillingia, iodide of iron, mercurials, and conium, belladonna, hyoscyamus, &c., were all employed, either by Drs. Lodge and Samuels, or by myself—sometimes without benefit. Counter-irritants were employed throughout the disease, and were in a high degree beneficial, when *freely* employed. Sedatives, and especially those supposed to exercise such an influence over the brain and spinal cord, did not do well, nor, as a general thing, *any* sedative measures. Blood-letting I tried, but did not find any benefit, but rather harm; nor did cold to the head answer well in my experience, though it appears Drs. Lodge and Samuels regarded it more favorably.

Sulphite of lime was tried in one or two cases, and the muriated tincture of iron, but without any appreciable effect. They were administered, however, in conjunction with other remedies. This I did under the apprehension that the disease might be erysipelatous in character. Strychnia was administered in the latter stages of some cases, with the view of relieving the local or the general paralysis which constituted one of the sequelæ of the disease, and with ordinary benefit.

The epidemic of erysipelas occurred within the year 1863, and especially in the latter part of the year, and was somewhat peculiar in character. Its favorite seat seemed to be the mucous membrane of the throat, from this point extending to the nostrils on the one hand, and from thence to the face and head externally, and occasionally to the larynx. Such cases very frequently died—some of them, the diseased action appearing to pass through the cribriform plate of the ethmoid, and in this way extending to the membranes of the brain. Though this was the most usual seat of the disease, it attacked indifferently any part of the body and all ages.

In localities where the epidemic influence was most conspicuous, cases of puerpural fever occurred after nearly every case of parturition, and such cases almost invariably died. Most of the cases of erysipelas were easily managed, and in all respects the treatment was that which experience has declared best as a general thing in such cases.

I have not been able to obtain as full information concerning

these matters as I could desire, nor could I give it within the limits of this letter.

I am, Dear Sir,

Yours truly,

JAS. STEWART JEWELL.

DR. HINCKLEY, of Leland, in the central part of the state, attributes to the disease, as it appeared in that locality during the past winter, substantially the same symptoms. All the accounts we have seen concerning it, agree that it is characterized by no special premonitory symptoms, but is generally ushered in by a chill; pain in the head, neck, and extremities; rapid impairment of the special senses, with loss of strength; frequent pulse; hot skin; rigidity of the muscles of the neck, jaws, and sometimes of the extremities; red or purple spots on the surface; frequently convulsive movements followed speedily, by coma and death.

The duration of the disease is generally short, many patients dying within twenty-four hours, while others linger many weeks. In the most malignant cases, the chill and pain in the back of the head is followed almost immediately by loss of vision; rapidly-increasing stupor; rigidity of the muscles of the neck; convulsive movements or paralysis of the extremities; irregular respiration; very frequent or variable pulse; general suppression of secretion; capillary congestion or petechial spots in the skin; and, in from six to twenty-four hours, death. In attacks of less severity, the chill is followed by febrile reaction of greater or less intensity; rigidity of muscles, especially of the neck, back, and jaws; extreme restlessness; mental dulness; red or purple spots on the surface; diminished, but not suppressed secretions; impaired muscular action, which, in the progress of the disease, sometimes amounts to paralysis, especially of the sphincters, thereby allowing dribbling of urine and involuntary focal evacuation.

In the advanced stages, the pain is sometimes transferred suddenly from the head to the extremities; and the final convalescence of the patient is slow and tedious.

Diagnosis.—Most of those who have written about this dis-

ease, claim that the diagnosis is easy. From typhus, or any form of continued fever, it differs in the absence of premonitory symptoms; in the suddenness of the attack; in the well-marked chill; in the muscular rigidity; in the greater intensity and more circumscribed character of the pain; in the more immediate impairment of secretion and organic changes; in the earlier appearance of red or petechial spots; in its disposition to attack the young; and in the absence of the odor usually belonging to typhus. Yet Dr. NORTH, who wrote a very interesting paper on "Spotted Fever" in 1812, and most of the earlier writers regarded the disease as a variety or modification of Typhus. From pernicious intermittents and remittents, it differs still more widely. And certainly the absence of all soreness of the throat, swelling of the glands of the neck, exanthematous rash, and desquamation of the cuticle, should prevent it from being confounded with scarlatina.

Post Mortem Appearances.—The effects of this disease, or the appearances after death, vary much, according to the duration of the disease. In those cases terminating fatally, within the first twenty-four hours, little or no structural change is visible in any part of the body. The blood is dark and its coagulability impaired; the veinous capillaries generally congested or full, especially in the base and posterior parts of the brain and its membranes; and sometimes ecchymosed spots in the interior of the larger bloodvessels. If death has taken place at a later period of the disease, the membranes of the base and posterior parts of the brain are generally intensely red, with effusions both plastic and serous; the cerebral substance also injected and often softened; the muscular structures darker color and softer than natural; the lungs often passively engorged; and the kidneys often exhibiting appearances of fatty degeneration or the accumulation of fat globules in their cortical substance. The urine has often been found albuminous, both before and after death.

Pathology.—Such is a very brief glance at the symptoms, progress, and results of one of the most fatal diseases with which the physician has to contend. But what is its nature?

Where is its primary seat? And what are the correct indications for treatment? These are the all-important, all-absorbing questions with the practitioner at the bedside of his patient. Some regard it as a simple active inflammation of the medulla oblongata and base of the brain with their investing membranes. And hence the name "cerebro-spinal meningitis." That such local inflammation does occur in the progress of the disease, when it does not prove fatal in the first few hours, is clearly proved both by the symptoms and *post mortem* appearances. But is this the primary and essential part of the disease? Or is it merely an accompaniment, like the sore throat in scarlatina, the pustules in variola, or the affection of Peyer's glands in typhoid fever?

If we concede that the cerebro-spinal inflammation is primary and constitutes *the* disease, is that inflammation sthenic or asthenic? Are the properties of the structures involved, exalted, or impaired?

But a large proportion of those who have expressed opinions in relation to the disease, during the last few years, claim that the local inflammation is secondary; that the primary disease consists in a poisoned condition of the blood. "Blood-poisoning" has become a very fashionable term in modern pathology, and bids fair to supersede the magic word "*bilious*," which has so long served to explain all the ills of life.

But on the supposition that the disease, or its active phenomena, depends on a toxic or poisoned condition of the blood, what is the nature and whence the origin of the poison? There are two modes by which the blood may become impure or poisoned.

First, by the introduction of poisonous agents from without; as by the inhalation of an atmosphere impregnated with deleterious agents; by absorption of poisonous material from unhealthy, suppurating, and gangrenous surfaces; and by direct inoculation with poisonous viruses.

Second, by a failure of one or more of the excretory organs to eliminate from the blood the effete material as fast as it is derived from the metamorphosis of tissues. Thus a failure in the healthy action of the skin, lungs, liver, and kidneys causes

a corresponding failure in the secretion and elimination of perspiratory matter, of carbonic acid gas, of cholesterine and coloring matter of bile, and of urea, &c., and consequently an accumulation of these substances in the blood. There are two ways in which the deleterious agents introduced into the blood by either of the above methods, may produce their morbid effects. First, by acting directly on one or more organs or structures by contact, the blood being only a menstruum for holding the poison in solution and conveying it to the different parts of the system. Secondly, by acting primarily on the constituents of the blood itself, in such a manner as to impair their properties and render them incapable of performing their functions; and in some instances, at least, the action on the constituents of the blood is such, as to rapidly reproduce or multiply the original poison, as in the contagious fevers. When a deleterious agent acts in accordance with the first of these methods, the result is not properly a *blood disease;* but when its action is in accordance with the second method, it produces a true "blood poisoning," or "blood disease." It matters not whether the poison enters into actual combination with one or more of the ingredients of the blood, or whether it only induces morbid changes by its presence, analogous to well known catalytic action out of the living system, it, in either case, produces a primary blood disease. If cerebro-spinal meningitis or spotted fever depends on the action of a distinct or specific poison, does it originate exteriorly and gain access to the blood by inhalation and absorption; or does it originate from some combination of effete material retained within, from defect in the excretory functions?

When the poison is actually in the blood, does it produce the active phenomena of disease by acting directly on one or more of the organized structures, or primarily on the blood itself? These questions are both interesting and practically important. But observations hitherto made, concerning the circumstances under which the disease occurs, are so defective that a perfectly satisfactory answer cannot be given in the present state of our knowledge. We shall never be able to trace, satisfactorily, the

causes of epidemics, until accurate registries have been kept in considerable numbers, containing an exhibit of the thermometrical, hygrometrical, and electrical conditions of the atmosphere at the time such diseases make their appearance and during their prevalence. We need also a record of the previous physical condition and habits, and the condition of the lodging rooms, of each individual attacked, in any given epidemic. With an exact knowledge of all the important atmospheric conditions, and of the personal hygiene of the individuals attacked, it is highly probable that the efficient cause of the disease could be made apparent.

From the fact that the disease has prevailed more in rural districts than in cities; more frequently after extreme cold weather than at other periods; more with the young than the aged; while the topography of the several districts in which it has occurred is widely diverse; it is difficult to conceive of the production and diffusion of any one specific atmospheric poison under circumstances so variable.

And yet the suddenness with which the disease attacks its victim; the rapidity of its progress; and the uniformity with which it leaves traces of morbid action in certain structures; certainly indicate the action of some subtile and energetic poison. Whether it is derived from without or generated within, its primary action seems to be directly on the *vital affinity* of the tissues, so far suspending it as to impair all the organic changes, and thereby retard the movements of the blood in the whole capillary system of bloodvessels, indicated by rapid suspension of one function after another and the early appearance of purple or ecchymosed spots. But while the cause thus evidently influences generally that property of the living structures which we call *vital affinity*, it plainly manifests a special tendency to act on the serous surfaces, more especially those investing the cerebro-spinal portion of the nervous tissues, but sometimes also the pericardium, pleura, and endangium or interior lining of the vascular system. And hence it is, that, in all cases except those cases which terminate fatally in a few hours, we find evidences of severe disease in one or more of these membranous

structures. In the sudden general derangement of the system, followed so speedily by the tendency to asthenic inflammation in the cerebro-spinal meninges, or other internal membranous structures; as well as the frequent prevalence of the disease coincidently with that of erysipelas in the same neighborhood, there is suggested a close analogy between the two diseases.

Treatment.—But whatever theories we may adopt in relation to the disease in question, it is evident, from both symptoms and *post mortem* phenomena, that there are two principal sources of danger to the patients. First, from direct suspension of organic actions and death before reaction or local inflammation can be developed. Second, from the supervention of inflammation, chiefly, but not exclusively, in the cerebro-spinal centres. Such inflammation being of an asthenic character, its danger is greatly increased by the general derangement both of the blood and the properties of the solids. Whether we regard the severe and fatal epidemic which has prevailed in many localities during the past year, as a primary local inflammation, as a general disease of zymotic origin (that is, from occult atmospheric poison absorbed into the blood), complicated with local cerebro-spinal inflammation; or as a local disease of the excretory organs, allowing the blood to become poisoned by retention of urea or any other effete material, the real indications to be fulfilled by the practitioner at the bedside are, first, to maintain the vital properties, and consequently the atomic or organic changes throughout the various structures of the body; second, to restore general secretion, thereby eliminating whatever poison may exist in the blood, or to neutralize it without elimination; third, to counteract the known tendency to the development of dangerous local inflammation; and fourth, to combat such local inflammation after it is developed. The relative importance of these indications differs according to the severity of each individual case. In those severe and highly malignant attacks, in which the life of the patient is endangered by the direct and immediate suspension of the functions, not only of the cerebro-spinal centres but also of capillary and secretory actions generally, the two first indications are of para-

mount importance. But in all those cases in which the attack is less severe and febrile reaction becomes readily established, the two last indications assume the highest importance. While we feel no doubt about the general correctness of the foregoing indications for treatment, we freely acknowledge a feeling of embarrassment in recommending the individual remedies most efficient for fulfilling them. This embarrassment is increased by the well-known fact that the success of almost every remedy depends, not simply on its abstract qualities, but very much on the time and mode of its use.

The practitioner standing at the bedside of a patient, just prostrated by a chill or condition of extreme organic depression, and realizing that every hour is carrying him nearer to the point of fatal suspension of all the functions, what can he do to arouse the nervous, capillary, and secretory susceptibilities, so promptly as to restore the functions of these various structures, and thereby carry the patient safely beyond the first and most dreaded period of danger? Perhaps no one agent judiciously managed exerts more speedy and direct influence over the elementary properties of living tissues, whether nervous, vascular, or secretory, than free caloric and electricity. It has long been known, especially among the more eminent practitioners in the States bordering on the lower Mississippi and Gulf of Mexico, that one of the most efficient means for arousing the susceptibilities of the system, so as to establish reaction in pernicious intermittents, consists in thorough dashing of cold water over the whole surface, with alternate wrapping in warm blankets. The same process was found more successful than any other, for the same purpose, by Dr. ANDERSON, of Alabama, in one of the most malignant and fatal epidemics of scarlatina that ever visited that section of the country. We would suggest a modified form of the application of this remedy in the first stage of cerebro-spinal meningitis, or spotted fever. We would apply cold, by bags of pounded ice, if possible, to the occiput, cervical and upper part of the dorsal spine, and at the same time cloths wet in water as warm as can be borne by the hand, constantly to the whole epigastric and abdominal

regions, and also to the lower extremities. At the same time, we would administer internally, not diffusable stimulants or inebriants, nearly all of which, either directly or indirectly, retard the play of vital affinities, and consequently of organic or atomic changes in the tissues, but true organic stimulants.

Among the most active and reliable of these, are oxygen, phosphorus, cantharides, guaiac, turpentine, arsenic, and the chlorine and mineral acid salts.

The first, from its gaseous form and consequent inconvenient portability, can never be made extensively available in practice. The second, phosphorus, from its strong affinity for oxygen and consequent spontaneous inflammability, must also be excluded, to a great extent, from general practice; while its compounds, whether phosphates or phosphites, are comparatively inactive. No such objections, however, can be made to the remaining articles enumerated. A well-prepared tincture of cantharides constitutes one of the most speedily acting and efficient organic stimulants that we possess; and, in the stage of depression at the outset of the disease, we would give it in doses of from 20 to 30 minims; first, every hour; and subsequently, every two, three, or four hours, according to the effects.

If erysipelas was prevailing to any extent in the same locality, coincidently with the disease under consideration, we would add to each dose of the tincture of cantharides an equal quantity of the muriated tinct. of iron. In addition to either one or both of these remedies, we would also give moderately full doses of a solution of either chlorate of potassa or sulphite of soda, combined with tinct. of belladonna. A solution of about fifteen grains of either of these salts, with the same number of minims of the tincture of belladonna, may be given between each of the doses of cantharides.

The objects designed to be accomplished by this combination are three, namely, to increase the capacity of the blood for holding in solution oxygen gas, and thereby induce a greater absorption of that powerful organic stimulant from the inspired air in the pulmonary air cells; to lessen the tendency to septic or necremic changes in the blood itself; and to induce contrac-

tion of the capillary vessels of the cerebro-spinal nervous centres, so as to relieve them of that passive congestion which we believe constitutes the first step in the development of the severe inflammation which so generally supervenes in that locality. That the salts here named have the power to increase the capacity of the blood for absorbing and holding in solution oxygen, has been clearly demonstrated both by experiment and clinical observation. Several years since, M. BERNARD, by a well-devised series of experiments, fully established the fact, that solutions of nearly all the saline compounds, when present in the blood out of the body, increased in a notable degree the capacity of that fluid for the absorption of oxygen.

Since those experiments, several cases of cyanosis have been reported, in which a free exhibition of chlorate of potassa in solution, promptly changed the venous color of the blood to an arterial hue, so long as the salt remained in the blood. We have also several times obtained the same results in two cases of cyanosis from defective closure of the foramen ovale of the heart. The result is not obtained, as some have supposed, by the liberation of a portion of the oxygen of the salt, for the latter is soon eliminated through the kidneys, unchanged in its composition. That this power to increase the capacity of the blood for absorbing oxygen from the air in the lungs, is a very important one, not only in the depressed stage of the disease under consideration, but in certain stages in many other affections, few reflecting pathologists will deny.

That these salts, and especially the sulphites, are capable of retarding or arresting a septic or necremic change in the blood, we have sufficiently shown in another part of this report. The last effect proposed to be accomplished by remedies, namely, contraction of the capillaries of the cerebro-spinal centres, depends on the belladonna.

We presume all the members of the Society are familiar with the experiments of Brown-Séquard for determining the action of certain substances on the cerebral circulation and functions, by which he deduced the fact that belladonna, stramonium, and ergot, were each capable, when taken internally, of inducing

contraction of the cerebro-spinal capillaries, and thereby diminishing the amount of blood in them, together with his application of the knowledge of this fact to the treatment of certain forms of paralysis. If the results of his observations are correct, and our clinical experience has thus far confirmed them, no remedy could be selected calculated to so directly counteract the development of cerebro-spinal inflammation or congestion, as the belladonna. Such are the means and the reasons for their use, on which we would rely for the treatment of the early stage of this most formidable disease. If they meet this stage successfully, the disease is arrested and convalescence ensues, without the interposition of other remedial agents.

But if these remedies were only partially successful, or we were not called until the first stage had passed, and the cerebro-spinal inflammation was more fully developed with general febrile reaction, we should omit the cantharides but continue all the other remedies and applications recommended in the first stage, with the addition of thorough dry cupping over the cervical and dorsal portions of the spine, and the cautious administration of alteratives and diuretics, being cautious to avoid active purgation or any other strongly depressing influence. Such are our views of the treatment of this formidable malady, based, we admit, upon rational, or, if you choose, theoretical, deductions. And yet they are not wholly without the practical test of experience. For we have been called to treat five strongly-marked cases of this disease during the past year.

We would not leave the impression, that the plan of treatment here recommended, or any other, will cure every case of cerebro-spinal meningitis or spotted fever. For we are well aware that in all severe epidemics, whether of typhus, yellow fever, scarlatina, variola, erysipelas, spotted fever, or cholera, cases occur in which, from the first hour of the attack, the elementary properties of the tissues, on which all organic changes depend, are so profoundly depressed, or, more properly, so nearly suspended, that no remedial agents will make any impression whatever. But do or give whatever you please, the various

functions become steadily more and more feebly performed, until in a very few hours life becomes extinct—leaving but little visible traces of morbid action in either the solids or fluids of the body.

ARTICLE XXVI.

CASE OF HYDROPHOBIA.

By R. S. ADDISON, M.D., Chicago, Ill.

On the 28th of June, 1862, about 9 o'clock, p.m., I was called to see Mrs. P——, a Norwegian, aged 32. She complained of a "lump" in the throat, a slight sick headache, a creeping sensation over all her body, but especially along the spine,—the latter being always in an upward direction. Her countenance was pallid, her eyes somewhat glaring and restless,—the pupils being dilated, her tongue was lightly coated white, except along the edges and tip, which wore a purplish appearance. The temperature of the skin was little above the normal standard, though the pulse was beating at the rate of 100 per minute. Upon her upper lip and forehead were the remains of what appeared to have been small lacerated wounds, but not exhibiting the least sign of pustulation.

As it was rather dark, I opened a window at the head of the bed on which she was lying, for the purpose of admitting a little more light, and, the following instant I perceived some spasmodic action in the features; she at the same time raised herself up, and very abruptly closed the window, saying it made her feel cold—although at this time there was scarcely a breath of air to be felt.

Upon this I expected Hydrophobia to be present; and, with the view of testing the correctness of my suspicion, I took a little pulv-Doveri from my pocket-case, mixed it with an ounce of water, and requested her to swallow it. After some little hesitation, she carried it to her lips and withdrew it again; but, upon my urging her to do so, she gulped rather than drank it down, and, with a slightly-perceptible shudder, set down the cup.

I then, in company with her husband, left the room, promising to send her something that would relieve her, and she seemed satisfied. When we were out of her hearing, I asked her husband if she had ever been bitten by a dog, and he replied that she had, under the following circumstances:—

They had recently moved from another portion of the city, and a pet dog which they kept had gone back to the premises they had vacated. The husband set out and brought it back, leaving injunctions with his wife, as he locked the dog in a shed, to keep him there a few days until he became reconciled to the change. (I ought here to remark, however, that, in capturing the dog, he was also bitten by it upon the hand—for which he beat him, and was bitten a second time.) Mrs. P——, a few hours after the dog had been locked up, opened the shed door and commenced scolding him for his truancy; in an instant he sprang upon her, and, after tearing her dress into tatters, bit her in the face and upon the forehead, and rushed from the house, and was not afterwards seen by them.

On receiving the account, I felt *assured* that I had a case of true Hydrophobia to deal with. My next thoughts were—what shall I or can I do?

I prescribed tincture valerianæ, alternated with hydrarg. chlor. mit. and morph. sulph. every three hours, with a view to giving some relief to the patient, and gaining time until I could consult authorities on the subject.

The following morning I called and found my patient had passed a restless night, and seemed rather worse. She complained sorely of thirst, and said that, when she attempted to drink, a lump would rise in her throat and almost choke her. I requested her to drink whilst I was there, so that I might witness its effect upon her. She took a mouthful of water, threw the cup away from her, and grasped her throat violently with one hand, whilst she pressed the other upon her breast, trembling extremely at the same time.

I called Prof. Byford into consultation, and we agreed to continue the opiate in larger doses, ceasing the administration of the valerianæ, and watch for the result of the hydrarg.,

hoping that if we could get up sufficient alterative action, we might possibly find the case more tractable. We were doomed to disappointment, however; for it appeared to exert no further influence than to produce a few small discharges from the bowels.

With Prof. BYFORD'S concurrence, I proposed to administer chloroform by inhalation—as Dunglison, in his "New Remedies," relates instances where it is reported to have effected cures; but the patient had such a dread of it, on account of its somniferous influence, she begged us to try something instead, first. We then administered P. opii gr. j, every two hours. Up to this period—the end of the second day—she was unable to eat, although there was apparently nothing to prevent it except occasional spasms of a tetanoid character.

On the third day, I found all the symptoms of a more grave character. Pulse extremely small and irregular, but, on the whole, more accelerated than during the two previous days. She feared being choked to death. Temperature of surface, alternately high and low; features cadaverous, and at times covered with clammy perspiration; eyes surrounded by a dark areola; pupils alternately contracted and dilated; hunger and thirst intense, but accompanied by inability to swallow anything more than about a drachm of fluid at once. Efforts to take more than this amount, produced horrible contraction of the facial muscles; and the platysma myoides particularly, and the extraordinary portion, would be sure to be ejected through the mouth and nostrils.

She at this time evinced great exhaustion. Her manner of breathing now commenced to be very laborious and irregular. The act of expiration was accompanied by a sort of stertor, resembling, somewhat, the cough of a person troubled with laryngitis, the only difference being that it was harsher, and made with much greater effort. This, I suppose, is what is *popularly* termed the "barking," in such cases.

At this stage I informed her of the probable termination of her case, and urged her to inhale the chloroform, but she again refused: this time, however, with the understanding that if she

were "not better to-morrow," she would permit me to do what I might consider best. During this day, she obtained partial relief by the exhibition of P. opii gr. ji. every hour, during the earlier, and every half hour during the latter part of it.

Through all this time, she was rational and patient. Her husband's fears had caused him to remove her two children from the house, but she requested that they might remain at the window, so that she might see them at least. She could not now bear the window or door open,—the slightest breath of air being productive of frightful contortions of the whole body.

At 10 o'clock, p.m., of the third day, she complained of suffocation, and begged her husband to go to the door with her "to get a breath of air." He did so; and, after remaining about 30 seconds, she returned into the house and went to bed. About 11 o'clock she called for water, and he gave her about half a teacupful; she readily drank nearly the half of it, and, saying "It is hard so, but I must die," she sighed deeply, shuddered and died, thus preventing a trial of the chloroform.

Some of the circumstances attending this case are remarkable, as they conflict the written authorities; for instance:—Instead of a red, animated countenance, we had an extremely anxious, careworn and pallid one. Again; the horror, said to exhibit itself on the sight of fluids, did not exist in this case till after the trial to drink; and drinks were generally, in this case, received with fervor. Again; there was no grinding of the teeth, which we are taught to look for as a prominent symptom; and the tumors spoken of by Cooper, as existing under the tongue, did not show themselves; and, last of all, we have positive knowledge that the disease set in on the eighth day after being bitten; and, where the biting was done, she had no pain or itching.

Selections.

OF HEART-CLOT AS A CAUSE OF DEATH IN DIPHTHERIA.

By J. FORSYTH MEIGS, M.D., Fellow of the College of Physicians of Philadelphia, one of the Physicians to the Pennsylvania Hospital.

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It is now somewhat less than four years since my attention was directed to the formation of coagula in the cavities of the heart, as a cause of death in certain cases of diphtheria.

The *first case* in which I observed this accident, or result, occurred in my own practice, in November, 1860, in a little girl, between six and seven years old, healthy in every respect, and born of vigorous parents. She was one of four children, all living at the time, and this case was the only one which then occurred in the family. The attack was severe, the deposit covering the whole of both tonsils, the uvula, and a considerable portion of the posterior surface of the pharynx. The external lymphatic ganglions were very considerably implicated, the swelling and soreness being marked, but there was no œdema under the chin. The constitutional symptoms were severe, but not malignant, the appetite, in particular, being almost null. The treatment consisted of stimulants and nutrients internally, and of cayenne pepper infusion applied to the fauces, and a stimulant embrocation used externally. At the end of the second week, the disease had seemingly yielded, and, on the nineteenth day, the local symptoms had disappeared. The strength was so much improved that the child sat up in bed from time to time stringing beads, and, in the morning of the day named, she was placed in a large arm-chair for an hour. This was the first occasion on which she had been allowed to leave the bed after the onset.

On the afternoon of that day (the nineteenth) the patient was not so well. She was paler than she had been for some days, seemed weaker and more listless, and was more restless the night following than for some nights before. On the following day, there was again the same listless appearance about the child—a weariness, inattention, paleness of the face, a weakly pulse, poor appetite, but nothing more express. Towards evening, I was still more struck with this appearance of

general and inexplicable debility. And yet the muscular power was not seemingly much reduced, for, though there was no desire to sit up, the child moved freely in bed, turned, rose up and lay down without any difficulty whatever. The pulse, though feeble, was regular, between 90 and 100; the respiration easy, and no abnormal sounds to be heard either in the lungs or heart.

On the following day (the twenty-first) in the morning, I was, for the first time, seriously alarmed. The general expression was most curiously that of intense weariness, of extreme lassitude, without the slightest appearance of pain or distress anywhere. The circulation, however, was evidently failing. The pulse was still not over 100, its rhythm was correct, but the force of the arterial pulsations had lessened and become somewhat irregular, so that they were smaller and feebler than natural, and some much feebler than others. The temperature of the body was normal. The color of the surface was paler and whiter than usual, but there was no cyanotic tint of any part. The muscular movements, as performed in bed, were natural, quick, and sometimes petulant. The patient could lie in any position, used but one pillow, had no disposition to be raised up, and gave no sign whatever of even a tendency to dyspnœa. The mind and senses were as bright as ever, and the temper, beyond occasional slight fretfulness, was good. There was no appetite, but she took milk punch and stimulants when desired.

I now examined the lungs most carefully. There was nothing abnormal about them. Then turning to the heart, which I now felt must be the seat of trouble, I sought for endocarditis or pericarditis, but, in the absence of distinct murmur or friction, of increase in the area of dulness, or of altered position of the apex-beat, and, determined too by the entire absence of fever or pain, I was satisfied that there was no acute inflammatory condition to explain the state of the circulation. What remained? The formation by slow, but continuous, concretions, within the cavities of the organ, of a mechanical impediment in the systemic circulation, the external signs of which were to be seen in the gradual, but relentless, failure of the child's vitality, and especially in the weakening pulse, and the pale surface, whilst there was not a sign of cerebral, pulmonic or digestive disorder of a serious kind. Though I have said there was no murmur nor friction in the heart-sounds, there was a curious deviation from the natural condition, which it is difficult to describe. The sounds were confused, indistinct, and seemed as though reduplicated.

From this time the patient grew gradually worse. Stimulants with bark were freely administered, but to no purpose. The pulse became smaller and more feeble, and irregular in force, though not in rhythm, until finally it was a mere thread. The general pallor became deeper, but without cyanotic hue. The face was somewhat flushed, but, in other respects, natural. There was no trace of dyspnœa, no pain, no clouding of the mind, no cough, no febrile heat, and, a few moments before the child died, she spoke out in clear, distinct tones, and turned without any difficulty in bed, suddenly, and with force. The death was sudden, as in other cardiac diseases, about eight o'clock in the evening of the twenty-first day.

I regret that no examination of the urine was made either before or after death. At that time my attention had not been drawn so decidedly as now to the condition of the renal secretion.

Autopsy.—The lungs and digestive organs presented nothing abnormal. The pericardium was quite natural. The heart appeared somewhat larger than usual, owing to the fact that the right auricle was distended with a dark, jelly-like mass of coagulated blood. A large coagulum was found also in the right ventricle; this was firm, yellowish-white in color, adherent to the interior structures of the cavity, and, from its appearance, had evidently been some time in forming. A smaller coagulum was found in the left ventricle.

Of the *second case* I have but few notes, and therefore its history will be brief and imperfect. The subject was a girl between 7 and 8 years old, of good health. She was one of quite a large family, in which the disease was epidemic, the fatal case having been preceded by a very severe one, which, however, ended favorably, in a younger child, and being followed by another fatal case from croup, and by a less severe one in an older child.

This case began January 2d, 1862. It was severe from the onset; the throat affection being marked by extensive exudation, and by great tumefaction both interiorly and exteriorly. The case continued to present the usual symptoms up to the third week, when the local symptoms gave way, and I supposed that the attack was about to terminate favorably; but the child, instead of improving decisively, continued weak and languid. The circulation became feeble, as marked by general pallor of the skin, a small but not very frequent pulse, growing day by day more and more feeble, and a slowly increasing general debility, without any disturbance of the cerebral or general

nervous system, or of the respiratory or digestive functions. In this case, also, by the method of exclusion, I formed the opinion that the cause of the gradually increasing vital exhaustion lay in the circulation, and that it must be the result of coagulation of blood in the cavities of the heart. The child died on the 25th day from the onset, without any respiratory struggle, without pain, without marked or painful phenomena of any kind, with simply the signs of a slow, but constantly progressive impediment to the circulation.

The treatment consisted, as in the other case, of rest in bed from the first; capsicum gargle internally, and a stimulating embrocation to the outside of the throat; small doses (1-12 gr.) of Kermes mineral with Dover's powder on the first few days, and afterwards doses of iron, and milk punch or wine whey, with animal broth from the onset.

I was assisted at the *autopsy* by Dr. Packard, of this city. The lungs were healthy in all respects, as were also the digestive organs. The pericardium showed nothing abnormal. On opening the heart, we found coagula in the cavities of both sides. These coagula were large, firm, of a dark tint generally, but dotted through with yellowish-white points. They were so firm as to force the conviction that they had been formed for a number of days. In the left ventricle, the coagulum, which filled the cavity of the organ very completely, presented some singular characters. Its lower extremity, that which corresponded to the apex of the ventricle, exhibited a broken, irregular, uneven, and frayed or granulated appearance, so as to suggest at once to our minds the idea of its having been whipped and crumbled away in minute granular portions under the crushing influence of the ventricular contractions. We could not but ask ourselves whether this was not a case of heart-clot in which there was an evident attempt of nature at cure; the mode of cure being a process of slow disintegration of the coagulum from causes acting within the clot, whilst the minute, granular, almost molecular portions thus loosened, were detached by the churning action of the ventricle, and conveyed away to distant portions of the system, there to be arrested, and then finally absorbed under the marvellous selective power of the absorbent system of the body.

This was the only case of the three that I relate, in which conditions of the clot were present, exhibiting the method by which nature strives to remove from the heart the dangerous mechanical impediment to the circulation.

The *third case* occurred in F. L., a girl, aged seven years, of

healthy constitution, of unusual intelligence, and most active in all her habits. She was seized with what, for a few days, left me in doubt whether the attack was to be one of true diphtheria, or merely ordinary tonsillitis, with a slight accidental exudation of false membrane in small dotted points. The general symptoms were very mild at first. In the second week the increase in the amount of the exudation, the considerable tumefaction and soreness of the cervical lymphatic ganglions, the loss of appetite, the continued febrile movement, and the decided, though moderate general weakness, showed very plainly that the case was one of diphtheria. The appetite now flagged very much, deglutition became painful, and the temper grew irritable and peevish, so that it was very difficult to nourish the patient sufficiently. At the end of the third week the throat was better; the exudation, which had never extended beyond the two tonsils and the velum, was diminishing in extent, and the external swelling had almost disappeared. The pulse was between 90 and 100; the skin only at times rather warmer than usual, the muscular strength not greatly reduced, since the child could move freely in her bed, rise up and lie down, and sit up for some length of time to play with her toys. The appetite was poor, but by urgent persuasion the child was made to take a sufficient amount of food daily, in the form of milk punch, wine whey, animal broth, milk toast, tender meat, or some such articles of diet.

At the risk of being tedious, I must state that, though at this time the local symptoms were favorable, and the general condition, as shown by the pulse, respiration, digestion, and the state of the circulation, not positively discouraging, I felt uneasy and anxious about the prospects of my patient. The child made no decided progress towards full recovery. She was listless; the pulse was rather feeble; the surface pallid, and she had a peculiar weary expression of countenance, so that, warned by past experience, I began to fear the existence of, or a tendency to, the same accident I had already witnessed twice before, the formation of cardiac coagulum.

The urine, in its general appearances, had been natural, and was so even now, except that the whole amount was rather less than usual. Upon exposing it to heat, a very moderate amount of albumen in a granular form appeared, and thickened the fluid.

About this time (21st day), the mother left the child's room for a few hours to get some exercise in the open air, and, on returning, was shocked and distressed at the extremely pale,

white, and weary look of the child. So strong was the impression that she declared nothing should induce her to leave the house again until the degree of danger was definitely determined. From this time the patient was not so well. The symptoms were peculiar, and unlike, in many respects, those of any morbid condition that I am in the habit of meeting with. The intelligence and all the senses were perfect in their integrity. The mind was as bright as in the best health, and, except that the temper was rather quick and irritable, and somewhat odd, the emotional nature was healthy. The muscular strength gave way very slowly. The patient could, at all times, move the head and arms freely, and, up to three days before death, could still rise up in bed. In the last few days she complained of weakness in, and difficulty of moving the legs —evidently a state of partial, and only partial paralysis. There was nothing like paralysis of the pharynx; and the voice, after being somewhat husky, had become clear again. The lymphatic swelling had mostly disappeared, and the fauces had almost regained their natural condition. The respiration was perfectly easy, not hurried, and there was no cough, except occasionally a loose laryngeal cough, which had replaced the previous stage of husky voice.

There was no serious dyspnœa, as the child could lie with the head and shoulders low, but the respiration was sometimes suspirious. This latter condition increased during the last two days, and especially during the last twenty hours, so that long-drawn and plaintiff sighs were more and more frequently heard, something like those which occur in the early stage of tubercular meningitis, and which told the practised ear that one of the great centres of vitality was seriously deranged. The circulation failed gradually. Each day there was a slight falling off in the power of this great system. The surface grew paler and somewhat ashy, but *not* cyanotic; it had a shrunken look. The face looked thin and anxious, or, rather, weary. The expression was peculiar. It was not what we expect to see in death from embarrassed circulation. There was no lividity, no frightened and staring eye, no pleading look, as in cardiac asthma or orthopnœa, but simply an air of intense weariness and fatigue, like that of one utterly fagged out with a long and hopeless contest with a deadly enemy. This, as well as I can describe it, was the character of the facies in this case, and in the other two which I have watched. In the absence of more specific and positive symptoms of this condition, I take the above mentioned peculiarities of the physiognomonical expression to be of considerable importance.

The pulse was feeble and small during the last week of life, these conditions becoming more and more marked as time went on. It was not frequent, running usually from 80 to 100. It was irregular in force, towards the last intermittent, but not very irregular in rhythm. During the last day it was very small, weak, thready, and with considerable intermissions. There was nothing particularly to be noticed about the heart-sounds—indeed, the child was so fretful, when disturbed, that no proper examination was made in the latter part of the attack.

The urine continued moderate in quantity, rather dark in color, without deposit, and with a notable, but not large precipitate of albumen on boiling.

During the last week, I had stated my fear that the cause of the constant declension in the patient's state was the gradual formation of a coagulum in the heart, this being slowly added to and increased in size by daily concretions forming upon its exterior surface. I was assisted during the last week by one of our best practitioners, and during the last two days by a third gentleman, to both of whom I expressed freely my opinion. They regarded the case as a singular one, but were not as well satisfied as myself in regard to the immediate cause of the constantly failing circulation.

As death approached, late in the evening of the 28th day, the general debility became more and more marked, so that the child would ask to be assisted in changing her position. The mind and senses continued quite clear; the respiration, saving its sighing character and occasional suspensions, was not visibly difficult nor labored; the swallowing was not materially affected except from weakness; the pulse became a mere thread, and, for half an hour before death, could scarcely be felt; the extremities became cool and then cold; the child was drowsy and inattentive; there came a longer suspension of the breathing, a slight general convulsion, repeated two or three times within a space of fifteen minutes, and the young life had gone out, under some strange cause of embarrassed circulation, which, for a whole week, had been as tenaciously and as gradually blocking the general circulation as the slow and yet continuous formation of false membrane in the larynx, in true croup, blocks and finally arrests the function of respiration.

The treatment of this case was as follows: The child was confined to a bed or sofa from the start, being allowed to sit up to use her toys, but not permitted to run about the room. For the first few days chlorate of potash, in doses of five grains

every two hours, was administered. After this, one grain of sulphate of quinia in solution with five drops of the tincture of the chloride of iron, were given every three hours, until a few days before death, when the child would no longer take it. She was then ordered a teaspoonful of elixir of cinchona, every two or three hours. When the urine was found to be scanty and albuminous, a mixture of acetate of potash, spirits of juniper, and spirits of nitre was given alternately with the iron and quinia. This soon sickened the stomach, when the spirits of nitre was given alone in water.

Throughout the case the diet was nutritious, consisting of milk-food, with bread and animal broths, and tender meat, when the child would take it. Early in the case brandy was added to the milk, and, as it progressed, the quantity was increased, or it was changed to wine whey, as it was found possible to induce the patient to use them.

The local treatment consisted at first in the use of capsicum infusion as a wash internally, with an embrocation of tincture of cantharides and spirits of turpentine applied externally from time to time. Later in the disease, alum in powder, mixed with sugar, was applied to the fauces.

Autopsy.—Lungs natural, except that they were paler and more crepitant than usual; they exhibited no signs of collapse, and only very slight appearances of congestion at the bases behind.

Pericardium natural; no effusion beyond a few drachms, and no trace of unusual vascularity, or of exudation. The whole size of the heart rather greater than usual, and the right auricle very much larger than the left (four or five times); blackish in color, and much distended. On opening the cavities, no trace of inflammatory action. The right side of the heart presented a firm, dark-colored coagulum, filling up the right auricle, and exhibiting prolongations into both cavæ. These prolongations were dark-colored in their general aspect, but here and there showed oblong points of a yellowish-white color. They were firm enough to retain their shape on handling, and to bear some traction before they broke. The coagulum in the auricle was continued through the tricuspid orifice into the right ventricle, filling up to all appearances, almost completely, the orifice. In the ventricle it occupied a large part of the cavity of that chamber, was adherent closely to the curtains of the tricuspid valve, to the chordæ tendineæ, and to the columnæ carneæ. It was here much lighter in color than in the auricle, being whitish or yellowish-white in its tint, and having also a

much firmer and more solid consistence. In addition to the large coagulum occupying the cavity of the ventricle, there were thin layers of fibrinoid-looking concretions lying in amongst the columnæ carneæ, and resting directly upon the lining membrane of the ventricle. These were adherent with a very considerable force, but could be stripped off. They reminded me, except that they were dark in color from the coloring matter of the blood, of the exudation I have so often peeled off from the laryngeal mucous membrane. A large, firm, and dark-colored cylindrical coagulum extended into the pulmonary artery, and was traced beyond the point where the vessel bifurcates.

The left auricle was small, contracted, and contained only a very small, dark-colored clot. The left ventricle was of natural size, and contained a rather firm, slightly adherent, dark-colored coagulum, which sent a small prolongation into the aorta.

Remarks.—I am well aware that the three cases given above are but imperfectly reported. Any one, however, who has been immersed, body and soul, for a series of years in a large private practice in an American city, will know how to make allowance for such imperfection. Even with these imperfections, I believe them to be important and worthy of publication, since they call the attention of the profession to a mode, if not a direct cause, of death in diphtheria, which thus far has not been, I believe, recognized and described. Certainly the above three cases, occurring in my own practice within a period of four years, show that this accident or condition cannot be very rare. During this period, though I have attended a great many other cases of the disease, most of them of a mild type, I have had only three other fatal cases, and all of these died from the extension of the exudation into the larynx. In neither did I suppose that heart-clot had formed, and in neither was an autopsy made. I have seen, besides these three cases in my own practice, four fatal cases in consultation, all of which died early in the disease with acute malignant symptoms.

A peculiar interest attends such cases as those above described. The patient may or may not have presented alarming symptoms at first, but these have in a great measure disappeared, and the anxiety of the family and physician, as the local and general symptoms subside, may, and indeed must, have greatly lessened, when, suddenly, or very gradually, the case assumes a new aspect. Without any very severe or threatening symptoms, the experienced physician *feels* that some new danger approaches. The sudden arrest in the pro-

gress towards health; the continuance of certain general symptoms, such as weakness and altered temper, in spite of the improvement in the local signs; the pale face and weak pulse, and the air of general and inexplicable lassitude, beget a vague anxiety which hardly takes shape in time to save the physician the mortification and distress, and the family the anguish, of a sudden and unexpected catastrophe. I have seen, both in our own and in foreign journals, accounts of cases in which sudden and unexpected death has taken place during an apparent convalescence, in which the death has been supposed to be the result of exhaustion or syncope, or in which no attempt has been made to explain the cause of the sudden fatality. From the character of the symptoms detailed in some of these instances, I have no doubt that they were examples of the kind I have described above.

As to the cause of the coagulations I have described, I have only a few remarks to make. In 1849, my father, Dr. Charles D. Meigs, called attention to the accidental formation of heart-clots in parturient women, as a result of syncopal conditions, occurring in subjects who had already lost blood by hemorrhage during or after labor. He supposes that loss of blood increases the coagulability of what remains in the system, and that the syncopal state, occurring in women who have undergone hemorrhages, invites or conduces coagulation in the heart, through the slow and partially suspended movements of the heart during the existence of the fainting condition. He reports one case (*Obstetrics: the Science and the Art*, 4th ed., Philada., p. 339) in which a heart-clot seems to have formed on the day after the labor, and in which the patient lived to the eighteenth or nineteenth day. At the autopsy "a white, fibrinous coagulum was found in the right auricle, nearly filling it, and projecting through the tricuspid valve into the right ventricle; the tail of the clot was whipped into cords by the threshing action of the chordæ tendineæ of the ventricle. The pleura of the right cavity contained a large quantity of serum." If, however, the syncopal condition is, in truth, in this class of cases, and in others that I have met with, the real exciting cause of coagulation in the cardiac cavities, as I fully believe, this explanation will not apply to the production of coagula in diphtheria.

I shall merely suggest a mode of explanation which has occurred to me. This is that some peculiar change takes place in the constitution of the fluids or tissues, more or less akin to that which gives rise to the exudation of the diphtheric deposit

on the mucous surfaces, which does, in certain instances, by an analogous power or action, induce the formation of coagula upon the interior structures of the cardiac cavities. In the *London Lancet* (vol. II., 1863, Nos. VI. and VII.) are two Croonian Lectures, on the Coagulation of the Blood, by Mr. Lister, in which the writer supposes he has shown that the tissues, when deprived of their vital properties, comport themselves like ordinary solids, and are capable, by a kind of catalytic action, of inducing coagulation of the blood which comes into contact with them. He says:—

"Thus, when an artery or vein is inflamed, coagulation occurs upon its interior in spite of the current of blood, precisely as would take place if it had been artificially deprived of its vital properties."

If this theory be borne out by further observation, it would be necessary to look with great care, hereafter, to ascertain whether the cardiac coagulum of diphtheria has been preceded, or is accompanied, by the evidence of endocarditis. In the cases reported above, I did not find any of the usual appearances of endocarditis.

Can they be prevented? Entirely ignorant as we are in regard to the particular variety of the disease, in which we should anticipate their formation, we can have no better rule of treatment than to act in such a way as to get rid of the disease as rapidly and thoroughly as possible; or, in other words, to make assiduous use in all cases, mild and severe, from the very outset of the malady, of the remedies and various hygienic measures which observation and experience have shown to be most powerful in combating this dangerous blood disease.

Does the patient ever recover after a coagulum has formed in the heart? I am disposed myself to hope that, in some rare instances, and under very favorable circumstances, nature may be able to rescue the patient from even the abyss of danger. There is no doubt that subjects recover after the formation of thrombi in the vessels, and I believe it is generally acknowledged that some instances of recovery have takan place after the discharge of emboli through the great vessels of the heart, these emboli having been either carried through the heart from some point in the venous system where they had been formed, or having been formed originally in the cavities of the heart. M. Virchow supposes that the coagula or thrombi formed in the vessels undergo a softening process from the centre outwards, which reduces them to a puriform substance, "a puriform but not a purulent substance" (*Cellular Pathology*, Am. ed., p.

34). He does not describe any such softening process in coagola located in the heart, but infers that such disintegration may take place in large fragments of thrombi lodged in arteries. Referring to thrombi carried through the right side of the heart, he says, page 241:—

"I believe, namely, that when a considerable fragment of a thrombus becomes wedged at a certain point in an artery, it may in its turn crumble away through the onward pressure of the blood, and thus the minute particles to which this crumbling of the larger plug gives rise be conveyed into the small branches into which the vessel breaks up. Thus alone does it seem to me that the fact can be explained, that in the district supplied by an artery of considerable size a number of little deposits of the same sort are often found."

In one of the cases reported by me, the second, an effort was clearly being made by nature to break up and wash out from the left ventricle the clot which had there formed. Whether such an effort can ever be successful, is the question now under consideration. It cannot be answered with certainty. To know that the effort was being made, is at least some encouragement. Any one who will read the description given above, from M. Virchow, of the conditions observed by him in large fragments of thrombi carried into the larger branches of the pulmonary artery, cannot fail to see how closely they resemble those observed by myself in the case just referred to. I may mention that this case was observed before the publication of M. Virchow's work in this country, and that I could not, therefore, have been led to look for the changes described by the expectation aroused by the perusal of M. Virchow's facts and opinions.

Whether the metastatic inflammations and suppurations which M. Virchow seems to suppose always ensue, as a consequence of the conveyance of the particles or fragments of the disintegrated thrombus or clot into the vessels beyond the point of formation of that thrombus or clot, must necessarily follow, is a question which I do not believe is yet positively determined. I think it may fairly be questioned whether the arrested fragments or molecules of the disintegaated coagulum, or thrombus, may not be absorbed, after undergoing some preparatory transformation like the fatty degeneration of inspissated pus, described by M. Virchow, without the invariable and necessary inflammatory changes supposed to constitute the basis of the metastatic conditions.

Several years ago I saw a case in consultation which, at the

time, was extremely puzzling to me. It was that of a boy six years old, remarkably stout in build, hardy in constitution, and born of parents, on both sides, of the most vigorous and robust health. He had that characteristic which is so important in severe illness, toughness, tenacity of life, which makes the resurrections occasionally met with by all medical men in the course of a long experience. This boy had had a severe attack of scarlet fever, and had passed safely through the eruptive stage. During the desquamation he was attacked with albuminuria, and, when I saw him, he was passing a very scanty amount of urine per day, which was highly charged with albumen, and which the microscope showed to contain blood-globules, very numerous and large fibrinous tube-casts, and much exfoliated epithelium. He had extensive anasarca, was much exhausted, and continued very ill for many weeks. He became emaciated, very pallid; and, after the dropsy had disappeared, and the urine had greatly improved in quantity and quality, had the following curious train of symptoms. He was very feeble, so that he made no attempt to leave the bed, but he had no cerebral disorder, no material disturbance of the respiratory organs, and was always able to take his stimulants and nutrients, which were administered in large quantities, and which, with iron, constituted the essential treatment. His liver, however, became enormously enlarged, so that it extended down somewhat below the umbilicus, and then around to the crista of the right ilium. It was not painful to the touch, nor did he complain of any spontaneous pain in that region. At this time the heart-sounds had the same curious characters that were noted in the first case described above; they were indistinct, and gave at the same time the impression that they were reduplicated. The impulse was distinct, but feeble. The child continued for many weeks in this state, exhausted, emaciated, prostrate, and then began very slowly to mend; and finally, after having been in the very jaws of death, recovered entirely. Since meeting with the cases detailed in this paper, I have thought it not unlikely that the boy just alluded to may have had, and may have survived a heart-clot. His health was something quite unusual, both in fact, and by the law of descent, and I do not know that a recovery from a heart-clot, by the process above hinted at, would be more extraordinary than one from a wound, with loss of brain substance, caused by the passage of a tamping-room through the anterior portion of the cerebrum, or that of the Count d'Aumale, described by Parè, who recovered after a spear had been driven from front to rear, through the upper regions of the brain.

OXYGENNESIS FOR THE INSTANTANEOUS PRODUCTION OF PURE OXYGEN WITHOUT HEAT.

By MR. J. ROBBINS.

From the time of the discovery of oxygen to the present, perhaps no subject has so much engaged the attention of chemists as the production of it at a cost sufficiently low to be employed in the arts, for the reduction of metals and other operations requiring a high temperature, and also for the purposes of illumination, the light obtained by it vieing in splendor with the sun's rays. This desirable object has yet to be accomplished, and may be regarded as a prize to be won by some future happy discoverer. It seems surprising, since Nature has provided us so bountifully with this substance, and presented it in such a variety of combinations, that, up to the present time, there should be no known method of separating, except at such a cost which excludes it for the purposes just enumerated.

In Gmelin's "Chemistry" six processes are given for the production of oxygen:—

1st. By heating chlorate of potash to low redness. As this process is slow and tedious, a small quantity of oxide manganese is usually mixed with the salt, which greatly facilitates the decomposition, and the evolution of gas is both rapid and abundant. According to the authority just named, manganese is often mixed with carbonaceous matter, which passes over as carbonic acid, but another impurity I may mention is the presence of chlorine, which, I believe, may always be detected when oxygen is obtained by this method.

2d. By ignition of red oxide of mercury. The presence of hyponitric acid may be feared in oxygen so obtained.

3d. By strong ignition of oxide of manganese.

4th. By heating manganese with an equal weight of oil of vitriol.

5th. By ignition of nitrate of potash. This salt, when heated above its melting point, is converted by the loss of two equivalents of oxygen into nitrite of potash; on a further increase of temperature both nitrogen and oxygen pass off, consequently the product is always contaminated with nitrogen, which increases as the action proceeds.

6th. By the action of sulphuric acid on bichromate of potash. Three parts bichromate potash and four parts sulphuric acid are heated together in a capacious retort. An evolution of oxygen

gas easy to regulate is the result. In this experiment we might congratulate ourselves if the process is conducted to the end without a fracture of the retort.

Of the six processes just described, two only are now used, viz.: chlorate of potash with or without manganese, and manganese alone. More recently other processes have been recommended, one of which, by heating together nitrate of soda and oxide of zinc, has been patented. From this mixture oxygen is said to be produced at a cheaper rate than by any other method at present known. Unfortunately for the value of this discovery, the product is contaminated with a considerable percentage of nitrogen. M. Kuhlman, of Lille, discovered and published an ingenious and beautiful process for the production of oxygen by means of baryta. He found that by passing a current of common air through caustic baryta heated to dull redness, peroxide of barium was formed, which, on an increase of temperature, is resolved into oxygen gas and caustic baryta; the latter ready again to perform its part in a similar operation. The idea naturally suggested itself that the means were now at hand for getting oxygen from the atmosphere in any quantity at a small cost. This method, although so promising, has been for the present abandoned; it was found that, after a few operations, either from a morecular change, or from the silica or other impurities, a sort of glass or fusion resulted on the surface, the baryta then refusing to act again.

We now come to the consideration of the new method for the generation of oxygen recently introduced by myself. The process or the compound employed in it has been named *oxygennesis*. It will have doubtless been observed by you that, in all the processes hitherto known, a high temperature is necessary, and until that point is reached, no product whatever is obtained; this fact we may consider as the chief difficulty experienced in the preparation of oxygen, and more especially so when sulphuric acid is used. If, for example, by the mere addition of sulphuric acid to bichromate of potash in the cold, we could get the same results which are obtained by the application of heat, this process, instead of being thrust in the rear, would have taken front rank.

Oxygennesis, therefore, stands alone as a novel and the only mode we possess for producing oxygen without the application of heat. The mode of using this compound is extremely simple. We have only to take some of this powder, place it in a glass flask or bottle provided with an exit tube, pour on any of the dilute mineral acids, and we have immediately oxygen evolved

in a similar way, and with as much facility as hydrogen is obtained from zinc or carbonic acid from a carbonate.

The composition of this compound is extremely simple, merely peroxide of barium, and bichromate potash. Not so the chemical changes resulting from an addition of an acid. Peroxide of barium, on addition of sulphuric acid, is resolved into sulphate of baryta and peroxide of hydrogen, and it is from this sometimes so-called oxygenated water we get this curious and interesting chemical reaction. Whenever peroxide of hydrogen and chromic acid are brought into contact with each other, instantaneous decomposition is the result, the chromic acid is reduced to sequioxide of chromium, and the peroxide of hydrogen to water; at the same time pure oxygen derived from both those substances is disengaged. The theory of this very interesting reaction is not, I believe, well understood, and I know only one way of explaining it, that is, on the ozone and antozone theory of Brodie. According to that theory, oxygen exists in three different states or conditions, viz.: ozone, antozone, and ordinary oxygen, and whenever ozone and antozone (which may both be considered more or less active) are brought together, they unite and neutralize each other, as it were forming passive or common oxygen.

To return to the composition of the powder, we are not compelled to use precisely those ingredients mentioned, but may substitute analogous compounds. Peroxide of barium might be replaced by any other peroxide capable of forming binoxide of hydrogen, of which there are several—peroxides potassium, sodium, strontium, and calcium—but all these at the present time are practically useless, peroxide of barium being the only one that can be easily and cheaply prepared. Bichromate of potash may be substituted by manganate or permanganate of potash, binoxide of manganese or binoxide of lead; the cost of the two first-mentioned forbids their present use, and the one selected is by far preferable to the others. With regard to the acids, either of the mineral class will do, but I prefer a mixture of dilute sulphuric and hydrochloric acids.

The next question demanding our notice is, in a commercial point of view, a most important one; however much this method may be admired for its simplicity, and the ease with which the operation may be conducted, its ultimate success or failure must depend on its cost. Can the oxygennesis, therefore, be manufactured and sold at a price sufficiently low to make it an article of commerce? I believe it can be, and be made available for all purposes wherever oxygen is required to the extent of some

gallons. One of the ingredients of this compound, peroxide of barium, has never yet been produced and sold as a commercial article, and from the trouble of making a small quantity, but few even practical chemists care to prepare it for themselves. It can hardly, therefore, be expected that a compound of this nature can at once be manufactured and sold at a price it must ultimately be reduced to, if extensively used and produced in quantity. 5s. per pound, the price hitherto charged, would, I admit, be a barrier to its general adoption; but I am happy to say we have now made the necessary arrangements to lessen the cost of production, and have at the same time reduced the price.

Some of the baryta compounds are found abundantly in nature, and are of but small value in the market, but up to the present time but few uses have been made of them; they now promise a much more extensive application. Mr. Kuhlman has, perhaps, done more than any one else to develop their uses and value in the arts, and in the *Chemical News*, November 28, 1863, will be found some interesting extracts relating to them from Dr. Hofmann's report on chemical products and processes of the International Exhibition.

I shall trespass a little farther on your time to make a few remarks on one of the various applications of oxygen, which may be of some interest to the medical profession and to pharmaceutical chemists. I mean the employment of that body as a therapeutic agent by inhalation. For that purpose this ready method for producing the gas promises to be of great value. Towards the end of the last and the beginning of the present century, vital air, as oxygen was often and not inappropriately called, was used largely in this country and on the continent. In this country we find the names of Drs. Beddoes, Hill, Thornton, and other physicians. Dr. Hill used it for more than 25 years, and Dr. Thornton was quite eminent for his successful application of it. At the present time, the desire by medical men for the administration of oxygen has revived both here and abroad. Two papers have recently been read, to be followed by others on the same subject, before the Academy of Sciences at Paris, by Messrs Demarquay and Leconte. The experiments and observations of those gentlemen appear to have been very numerous and carefully made both on animals and on man, in disease and in health, and the conclusion they arrive at is, that oxygen is a valuable curative agent. If so good, then, as a remedy when its value was once known, what caused it to become and continue so long neglected? The explanation is, I think,

not difficult. In the first place, when this body was discovered, too much was expected from it. The first *furore* for its employment arose from the simple experiment which showed its power of rekindling an expiring match, and as oxygen is the essential element of our existence, it was supposed it might, in a similar way, rekindle the expiring vital spark. The more imaginative were elated at what they considered a discovery, so long dreamt of and so earnestly sought after by the alchemist. But oxygen is not the elixir vitæ. It will not restore grey hair to its original color, nor make an old man young. The difficulties and expense attending its administration may also be considered other reasons for its non-employment. Of what use was it for a medical man to order that which the patient could not get supplied? A physician, therefore, having faith in the remedy, was compelled to lay himself out especially for it, become an oxygen doctor, and prepare and administer the remedy himself. These difficulties now no longer exist.

We have on the table an oxgyen inhaler and generator, made according to the suggestions of Dr. Richardson. The generation of the gas is by this method so easy and so simple that patients can prepare their own dose, or, if need be, the nurse after one lesson can as well undertake the operation as any other duty she may be required to perform.

Physicians who may wish to employ this remedy may now prescribe it with no more hesitation than they would prescribe a black draught or a calomel pill.

Dr. Squire wished to enquire whether Mr. Robbins' invention had not been patented; if so, he doubted the value of the patent, for Prof. Brodie had pointed out in 1851, that when peroxide of barium was treated with an acid solution of bichromate of potash oxygen was evolved with great regularity. Faraday had mentioned the same thing in one of his lectures on ozone at the Royal Institution. Dr. Squire also objected to the name oxygennesis, and thought it ought rather to be called oxyexodus, as the oxygen was eliminated, not created.

Mr. C. H. Wood said that the reactions of peroxide of barium and bichromate or permanganate of potash were well known as scientific facts, but did not consider that that effected the value of Mr. Robbins' patent. The great objection to Mr. Robbins' process was the cost of the oxygen, and he was glad to hear that this was likely to be reduced. He did not consider that the process was easier than that for obtaining oxygen from chlorate of potash and manganese; indeed, he thought the latter the easier operation. He wished to know how Mr. Robbins decided

that oxygen from chlorate of potash and manganese was contaminated with chlorine and not by ozone. The late Mr. Witt had shown that oxygen obtained in this way always contained a variable proportion of ozone. He (Mr. Wood) did not consider ozone objectionable for inhalation, for he thought that whatever good was effected by oxygen, when inhaled, must be due to the ozone which gave active properties to oxygen.

Prof. Redwood said that Mr. Crace Calvert had pointed out that oxygen from chlorate of potash and peroxide of manganese always contained chlorine or an oxide of it, and he did not think that the gas from this source was fit to administer. He freely gave his testimony to the value of the process Mr. Robbins had introduced. The process was certainly easy, though it was not calculated for chemists, but would answer well when oxygen was wanted for medical purposes.

Mr. Robbins, in reply, said that he was not aware of Mr. Brodie's experiments, and had not heard of them, although he had spoken to many chemists on the subject. He considered it a great boon to be able to get oxygen by a cold process, and at all events, still considered the application new. Authorities differed as to the value of oxygen as a curative agent, but the most recent experiments of Demarquay and Leconte seemed to prove that it possessed great remedial power. Under these circumstances, it was well to have a means of procuring oxygen as easily as making a cup of tea. With regard to Mr. Wood's doubt about the presence of ozone instead of chlorine, he might say that, in conjunction with Mr. Brown, now of the War Department, he had examined many specimens of oxygen obtained from the chlorate and manganese for ozone, but in all cases found chlorine instead. In his (Mr. Robbins') process the oxygen was well washed.

Mr. Wood said that washing would not remove ozone.

Mr. Robbins replied that Faraday had showed that ozone could be removed by washing, and he himself had found ozone made by means of phosphorus in the ordinary way disappear after shaking with water well for an hour.

The Chairman said he considered Mr. Robbins' an elegant way of procuring oxygen for medical purposes, which had the recommendation of cheapness when the oxygen was considered as medicine.—*Chemical News, London, March* 12, 1864, from *Trans. Lond. Pharm. Society.*

Proceedings of Societies.

PROCEEDINGS OF THE TWELFTH ANNUAL MEETING, FOURTEENTH ANNIVERSARY, OF THE ILLINOIS STATE MEDICAL SOCIETY.

HELD IN CHICAGO, MAY THIRD, FOURTH, & FIFTH, 1864.

The Fourteenth Anniversary Meeting of the Illinois State Medical Society, assembled in the Common Council Room, in the City of Chicago, on the morning of May 3d, 1864. In the absence of the President, Dr. A. H. Luce, of Bloomington, first Vice-President, took the Chair and called the Society to order at 10½ o'clock A.M.

Dr. M. O. Heydock, of Chicago, Chairman of the Committee of Arrangements, welcomed the members of the Society to the hospitalities of the city, in a brief and very appropriate address, and reported the following list of permanent members and delegates as present, viz.:—

Dr. H. Noble, of Heyworth, McLean Co., Ill.
" A. H. Luce, of Bloomington, " "
" J. S. Whitmire, of Metamora, Woodford Co., Ill.
" David Prince, of Jacksonville, Morgan Co., "
" L. T. Hewins, of Loda, Iroquois Co., "
" M. O. Heydock, of Chicago, Cook Co., "
" E. L. Holmes, " " "
" W. H. Byford, " " "
" N. S. Davis, " " "
" Gerhard Paoli, " " "
" R. E. McVey, of Waverly, Sangamon Co., "
" S. Wickersham, of Chicago, Cook Co., "
" E. Andrews, " " "
" J. H. Hollister, " " "
" Ira Hatch, " " "
" DeLaskie Miller, " " "
" John Bartlett, " " "

" Thomas Bevan, " " "
" R. N. Isham, " " "
" J. M. Steele, of Grandview, Edgar Co., "
" E. Ingalls, of Chicago, Cook Co., "
" D. W. Young, of Aurora, Kane Co., "
" Chas. G. Smith, of Chicago, Cook Co., "
" Alex. Fisher, " " "
" J. Adams Allen, " " "
" D. E. Ellis, of Belvidere, Boone Co., "
" Noble Holton, of Buda, Bureau Co., "
" John Woodworth, of Aurora, Kane Co., "
" N. P. Peterson, of Chicago, Cook Co., "
" J. W. Freer, " " "
" V. L. Hurlbut, " " "
" J. P. Ross, " " "
" J. S. Jewell, " " "

The Secretary then called the full roll of members; and, on motion, the reading of the minutes of the last Annual Meeting was dispensed with.

The election of permanent members being in order, the following were duly proposed and elected, as new members:—

Drs. R. C. Hamill, of Chicago; A. Groesbeck, of Chicago; Henry M. Lyman, of Chicago; James Miner, of Waverly; Noble Holton, of Buda; L. F. Warner, of Chicago; E. P. Cook, of Mendota; J. P. Ross, of Chicago; H. Wing, of Chicago; J. H. Foster, of Libertyville; J. H. Hagerty, of Dwight; F. N. Burdick, of Elgin; Joseph Tefft, of Elgin; S. C. Blake, of Chicago; J. S. Jewell, of Chicago; James H. O'Reilly, Chicago; W. R. Fox, of Wilmington; M. J. Johnson, of Wilmington; G. B. Lester, Bristol; F. A. Emmons, of Aurora.

On motion of Dr. J. H. Hollister, a committee of one from each county represented, was appointed to nominate officers and Standing Committees for the ensuing year.

The following were announced as such Committee:—

H. Noble, of McLean Co.
R. E. McVey, of Morgan Co.
R. C. Hamill, of Cook "

J. M. Steele, of Edgar "
J. S. Whitmire, of Woodford Co.
L. T. Hewins, of Iroquois "
D. W. Young, of Kane ".
E. P. Cook, of Lasalle "

On motion of Dr. S. Wickersham, Surgeon S. H. Holden, U.S.A. and Medical Director for Chicago, and Surgeon J. H. Grove, U.S.A., Superintendent of General Hospitals of Chicago, were elected members by invitation.

On motion of Dr. E. L. Holmes, W. H. Baxter, of Moscow, Iowa, was elected a member by invitation.

Dr. M. O. Heydock, Chairman of the Committee of Arrangements, presented invitations from the faculty of the Chicago Medical College; the Rush Medical College; the Marine and Mercy Hospitals; and from the Surgeons of the Military Hospitals in Camp Douglas, to visit each of those institutions and recommended that the several invitations be accepted, and that a part of the afternoon of Wednesday be devoted to the visiting of Rush Medical College and the Marine Hospital; and the whole of the afternoon of Thursday to the visiting of the Chicago Medical College, and the Mercy and Military Hospitals.

On motion, the recommendations of the Committee were unanimously adopted.

An invitation was received from Dr. N. S. Davis, requesting the members of the State Medical Society to meet those of the Chicago City Medical Society in a social entertainment at his residence on Wednesday evening, which was accepted. The Treasurer, Dr. J. H. Hollister, of Chicago, submitted the following report, which was accepted and approved:—

J. H. HOLLISTER, *Treasurer*,
In ac't with ILL. STATE MED. SOCIETY,

1683.	*Dr.*	
May 7.—To Cash received from new members at Jacksonville, May 7th, 1863, for Initiation,		$22 00
Cash of the same—dues for 1863 - - -		20 00
Cash received from old members—dues 1863,		28 00
		$70 00

1863. *Cr.*

May 12.—By amount paid Wm. Craven, Printer—
Balance of Bill for Transactions, 1860, - - $69 50

$00 50

Amount due G. H. Fergus, Printer, for publishing the Transactions for 1863, for which the Society is now indebted, - - - - - 56 05

Respectfully submitted.

J. H. HOLLISTER, *Treas.*

Dr. D. W. Young, of Aurora, moved that the annual assessment for the present year be three dollars, which motion, after some discussion, was adopted.

The Permanent Secretary, Dr. N. S. Davis, submitted the following annual report:—

REPORT OF THE COMMITTEE OF PUBLICATION AND SECRETARY FOR 1864.

Within sixty days after the adjournment of the last Annual Meeting, the undersigned notified, by letter, all the Committees appointed at that meeting.

As the cash receipts of the last year were no more than sufficient to pay the previous indebtedness of the Treasury, leaving nothing to pay for the Transactions of the past year, the Secretary had no alternative but to forego the publication of the Transactions altogether, or pursue the same course as in previous years, namely, first publish the reports and papers in the Medical Examiner, and thereby avoid all the expense of type-setting—leaving the tax upon the Treasury of the Society to consist only of paper and press-work.

The Publishing Committee chose the latter course, and published 300 copies of the Transactions of the Meeting at Jacksonville, at a cost of $68. Fifty copies were taken by Dr. Prince, of Jacksonville, and paid for, *pro rata*, as the cost of publication, leaving a balance of $56.05. Copies of the Transactions have been mailed to all the members who had paid the annual assessment for the year—leaving about 200 copies now on hand—about 30 of which have been laid on the table in this room for the use of members.

In behalf of the Committee of Publication.

N. S. DAVIS,
Per. Secretary.

On motion of Dr. DeLaskie Miller, the report was accepted and the thanks of the Society tendered to the Secretary for his liberality in procuring the publication of the transactions.

Reports of Standing Committees being called for, the Chairmen of several announced their possession of reports; and, after fixing the time for hearing the same, the Society adjourned to 2 o'clock P.M.

AFTERNOON SESSION.

At 2 o'clock P.M., the Society was called to order, Dr. A. H. Luce, Vice-President, in the chair.

Dr. H. Noble, Chairman of Committee on Nominations, reported as follows:—

For President.—A. H. LUCE, M.D., of Bloomington.

Vice-Presidents.—J. M. STEELE, M.D., of Grandview; THOMAS BEVAN, M.D., of Chicago.

Assistant-Secretary.—C. R. PARKE, M.D., of Bloomington.

Treasurer.—J. H. HOLLISTER, M.D., of Chicago.

Committee of Arrangements.—T. F. WORRELL, M.D., of Bloomington; S. W. NOBLE, M.D., of LeRoy; T. P. ROGERS, M.D., of Bloomington.

Committee on Practical Medicine.—J. ADAMS ALLEN, M.D., of Chicago; C. GOODBRAKE, M.D., of Clinton; H. NOBLE, M.D., of Heyworth.

Committee on Drugs and Medicines.—JOHN BARTLETT, M.D., of Chicago; F. R. PAYNE, M.D., of Marshall; T. D. FITCH, M.D., of Kewanee.

Committee on Obstetrics.—WM. H. BYFORD, M.D., of Chicago; LUCIUS CLARK, M.D., of Rockford; S. T. TROWBRIDGE, M.D., of Decatur.

Committee on Surgery.—D. W. Young, M.D., of Aurora; A. L. MCARTHUR, M.D., of Joliet; L. T. HEWINS, M.D., of Oakalla.

Special Committee on Ophthalmology.—E. L. HOLMES, M.D., of Chicago; R. E. MCVEY, M.D., of Waverly; J. S. WHIT-

MIRE, M.D., of Metamora; F. B. HALLER, M.D., of Vandalia.

Special Committee on Spotted Fever.—J. S. JEWELL, M.D., of Chicago.

Special Committee on Orthopœdic-Surgery.—DAVID PRINCE, M.D., of Jacksonville.

Bloomington was recommended as the place for holding the next Annual Meeting of the Society.

On motion, the report of the committee was accepted; and the officers and committees nominated therein, unanimously elected. The President elect returned thanks to the Society for the honor conferred.

Letters from absent members being in order, the Secretary read a letter from the retiring President, Dr. A. McFarland, Superintendent of Hospital for Insane at Jacksonville, expressing his warm attachment to the Society, and his regret at not being able to attend the meeting on account of the sickness of his only Assistant in the Hospital.

On motion of Dr. J. A. Allen, Dr. McFarland was requested to furnish a copy of his Annual Address to the Publishing Committee for publication in the Transactions of the Society.

The Secretary also read a letter from Prof. H. A. Johnson, of Chicago, regretting his inability to attend the meetings of the Society on account of severe illness.

The reading of volunteer papers being in order, Dr. R. E. McVey, of Waverly, read an interesting communication on cerebro-spinal meningitis or spotted fever, as it had prevailed in the circle of his own practice.

Dr. J. Adams Allen, of Chicago, also read a very interesting paper on the same subject, referring to a severe epidemic of the disease, which came under his observation in 1848–9.

These communications were listened to with much interest; and, after a brief discussion by Drs. Hollister, Andrews, Whitmire, and Allen, the authors were requested to furnish copies of their respective papers to the Committee of Publication.

Dr. E. Andrews, of Chicago, Chairman of the Standing Committee on Surgery for the past year, read an abstract of his report, which was accepted and a full copy of the report referred to the Committee of Publication.

Dr. E. L. Holmes, of Chicago, read an abstract of his report as Special Committee on diseases of the eye. On motion of Dr. J. S. Whitmire, the report was accepted and referred to the Committee of Publication.

Dr. E. Andrews, of Chicago, Chairman of the Auditing Committee appointed at the last Annual Meeting, made the following report, which was adopted, viz.:—

"The Committee to which was referred the Annual Report of the Treasurer, Dr. J. W. Freer, beg leave to report that they have investigated the same, and found it to be correct, and recommend its approval.

E. ANDREWS,
Chairman of Com."

Dr. N. S. Davis offered the following resolution, which was adopted, viz:—

Resolved, That all reports of committees and volunteer communications, referred to the Committee of Publication, must be complete and delivered to the Permanent Secretary before the first of July next succeeding the meeting at which they were read.

On motion, the Society adjourned to 9½ o'clock in the morning.

MAY FOURTH—SECOND DAY.

Wednesday morning, 9½ o'clock, the Society was called to order,—Dr. A. H. Luce, President, in the chair.

The Secretary read the minutes of yesterday, which were approved. The Society also read a communication from Dr. F. K. Bailey, formerly of Joliet, but now in the U. S. General Hospital at Quincy, regretting his inability either to attend the meeting or send a report from the Committee on Drugs and Medicines.

Dr. J. M. Steele moved that the Secretary be appointed a Committee to present suitable resolutions in relation to the death of the late Dr. S. York, of Paris, Edgar Co. The motion was seconded and adopted.

The hearing of reports of Standing Committees being resumed, Dr. DeLaskie Miller, of Chicago, read the report of the

Standing Committee on Obstetrics and Diseases of Females. The report elicited an interesting discussion, which was participated in by Drs. Heydock, Prince, Steele, Bartlett, Whitmire, Andrews, and Hamill.

On motion of Dr. Prince, the report was accepted and referred to the Committee of Publication.

Dr. Bartlett offered the following resolution, which was seconded and adopted, viz.:—

Resolved, That the Chairman of the late Committee on Obstetrics (Dr. DeLaskie Miller, of Chicago) be appointed a Special Committee to consider the question of the influence of the mind of the mother upon her offspring; and also to inquire whether the husband of a pregnant woman ever experiences morning sickness in her stead.

On motion, Dr. W. H. Byford, of Chicago, was appointed a Standing Committee on Necrology.

Dr. D. Prince, of Jacksonville, presented a pretty full verbal abstract of his report on Orthopœdic Surgery, accompanied by many interesting illustrations.

Before completing his remarks, the hour arrived for adjournment. Dr. Heydock, from the Committee of Arrangements, reported the names of additional members. Adjourned to 2 o'clock P.M.

AFTERNOON SESSION.

Society was called to order at 2 o'clock P.M.,—the President in the chair.

Dr. Prince resumed and completed his report, which was accepted and referred to the Committee of Publication.

At 3½ o'clock P.M., the Society adjourned until 9½ o'clock the following morning, to enable the members to visit Rush Medical College and the Marine Hospital.

THURSDAY, MAY FIFTH—THIRD DAY.

The Society was called to order at 9½ o'clock, A.M.,—the President in the chair.

Secretary read the minutes of the proceedings of yesterday, which were approved.

Dr. J. Bartlett read a letter from Dr. McGugin, of Iowa, on

the subject of the fees of medical witnesses, and offered the following resolutions, which were adopted:—

Resolved, That a committee of three be appointed by the Chair, to consider in what respects the pecuniary interests of the medical profession suffer from unfavorable or deficient legislation.

Resolved, also, That this committee be authorized to petition the State Legislature, in behalf of this Society, for such legislation as they may deem necessary and proper.

Dr. N. S. DAVIS reported the following resolutions in relation to the death of Dr. S. York, which were unanimously adopted:

Whereas, Dr. S. York, of Paris, Edgar Co., Ill., an honored and highly esteemed member of this Society, has been recently stricken down, while in the service of his country, by the hand of lawless violence; therefore,

Resolved, That by his death, this Society has lost one of its most faithful, active, and honored members; the community where he lived, one of its most skilful physicians; and the country, one of its most patriotic citizens.

Resolved, That we deeply sympathize with his afflicted family and friends in this hour of their bereavement.

Resolved, That the Secretary be directed to forward a copy of the foregoing resolutions to the family of the deceased.

The President appointed the following committee to act on the subject of Dr. Bartlett's resolutions, and report at the next Annual Meeting, viz.:—Drs. John Bartlett, of Chicago; A. McFarland, of Jacksonville; and H. Wing, of Chicago.

Dr. D. W. Young offered the following resolutions, which were adopted, viz.:—

Resolved, That the present pay and rank of surgeons and assistant-surgeons in the army is inadequate to compensate them for the services required of and performed by them.

Resolved, That the members of this Association ought to make every possible exertion, through the National Medical Association, and our senators and representatives in Congress, to have our medical brethren in the field receive at least a reasonable compensation for their services and sacrifices while

they are braving the dangers of the camp and caring for the soldiers of our country.

Dr. H. Wing offered the following resolutions, which were referred to the committee appointed under the resolutions of Dr. Bartlett:—

Resolved, That the Profession is the proper judge of the qualifications of its members.

That the interests of the Profession would be promoted by having new members admitted on the judgment of the Profession itself; and, therefore,

That the committee appointed under resolution, to memorialize the State Legislature, be also instructed to ask that this Society be authorized by law to grant certificates of qualification, on proper examination, to undergraduates.

Dr. N. S. Davis, Chairman of Committee on Practical Medicine, read a somewhat lengthy report, which was accepted and referred to the Committee of Publication.

Dr. J. Woodworth offered the following, which was unanimously adopted:—

Mr. President:—As the hour for adjournment of this Society has arrived, and this is the last opportunity which will present itself wherein we can as a body recognize the courtesy extended to us by individual members of the profession during its session; I would therefore move that the thanks of this Society be expressed to the Common Council, the Faculty of the Rush Medical College, the Faculty of the Medical Department of the Lind University, the Physician in charge of the Mercy Hospital, and especially to Drs. R. N. Isham and A. R. Terry, of the U. S. Marine Hospital; Dr. J. H. Grove, U.S.A. Superintendent of Hospitals; Dr. Holden, U.S.A. Medical Director; and Dr. N. S. Davis, of Chicago, for those courtesies which have done so much to render this meeting one of interest, pleasure, and profit.

On motion, the following members were elected delegates to the American Medical Association for the ensuing year:—

Dr. N. Wright, of Chatham.
" D. Prince, of Jacksonville.

cases, now amenable to treatment, have been regarded as entirely remediless.

Before giving a description of the appliance, I will briefly rehearse the indications to be fulfilled in the adaptation of an artificial velum.

There is needed such a substitute for the soft palate and uvula, as shall be under the control of the muscles acting upon those parts; and this is quite possible, inasmuch as the essential parts of the palato glossus muscles and the palato pharyngei are almost always found remaining, both in cases of congenital fissure, and in those of accidental lesions of the palatine organs.

In the first place, this will allow of the elevation and depression of the artificial substitute, at will, so that the voice can be emitted through the oral or nasal orifice, or both, as may be required; and this is the main desideratum, for it is comparatively easy to provide for the necessities of mastication and deglutition by a simple covering to the orifice sufficiently resisting to withstand the pressure. Secondly, it should furnish such an adaptation as shall be at the same time accurate, impervious to the passage of liquids, or the breath in speech, and yet shall exert no pressure upon the surrounding parts to cause absorption or atrophy of the palatine or nasal organs. Thirdly, there is needed a substance that shall be susceptible of the motions of the soft palate, and shall not so weary the remaining muscles in the performance of their office (while this fixture is "in situ,") as to be impracticable.

These indispensible indications are fulfilled in the artificial velum under consideration, in the last particular by being made of vulcanized soft rubber, so constructed as to be movable upon and over itself, independent of its softness, elasticity, and generally non-irritating character, being thus susceptible of the contraction, expansion, elevation, and depression of the velum, in an extraordinary degree.

The third indication is admirably fulfilled by having a flange perfectly adapted, over the edges of the orifice, both superiorly and inferiorly, through the medium of a plaster of Paris impression of the parts, which is taken with the plaster about the consistency of cream, thus ensuring absolute accuracy.

ing, was an occasion of high social enjoyment. We give, in another part of the EXAMINER, a full record of the proceedings, and also the first half of the report of the Committee on Practical Medicine. We publish this part of the report thus early on account of the general interest felt in the subject of Cerebro-Spinal Meningitis or Spotted Fever.

Other papers in relation to the same subject will be published in the next number of the EXAMINER; while the remaining part of the report, relating to the improvements in Practical Medicine, will be deferred to the August number.

THE following interesting and important communication was received too late for insertion in the proper place under the head of original articles:—

CLEFT PALATE, CONGENITAL AND OTHERWISE. THEIR REMEDIES.

Having recently spent some time in examining cases of palatine fissure, and the various means adopted for their treatment in Europe, I would add my testimony in view of the opportunities which I have enjoyed, to that which may soon appear upon the same subject, in favor of an appliance invented by Dr. N. W. KINGSLEY, of New York City.

It has been successfully tested in a number of cases, for about four years, and may, therefore, be safely regarded as considerably in advance of those fixtures heretofore adopted to remedy this most disagreeable defect. While in Europe, I sought out and examined many of the patients who had been operated upon for fissure, particularly those for whom artificial "obturators" had been made; conversed with them while their obturators were in place; and then caused their removal in order that I might judge of the amount of benefit that had been derived from them. I found, however, in no one of these cases an apparatus that exactly accomplished the desired object.

Without going into the history of these cases, or their treatment; so far as I have been able to ascertain, no operation for fissure, whether surgical or consisting of a mechanical appliance, has until now been more than partially successful; and many

" R. E. McVey, of Waverly.
" H. Noble, of Heyworth.
" N. S. Davis, of Chicago.
" D. W. Young, of Aurora.
" J. M. Steele, of Grandview.
" J. Woodworth, of Aurora.
" J. Bartlett, of Chicago.
" J. S. Jewell, of Chicago.
" L. Clark, of Rockford.
" R. C. Hamill, of Chicago.
" N. Holton, of Buda.
" A. L. McArthur, of Joliet.
" E. P. Cook, of Mendota.
" T. D. Fitch, of Kewanee.
" S. W. Noble, of LeRoy.
" C. Goodbrake, of Clinton.

At 12½ o'clock, the Society adjourned for the year—it being understood that the afternoon should be occupied in visiting the Chicago Medical College, Mercy Hospital, and the Military Hospitals in Camp Douglas.

N. S. DAVIS, *Per. Secretary.*
H. W. JONES, *Assist.* "

Editorial.

Illinois State Medical Society.—The recent Annual Meeting of the Illinois State Medical Society in this city was well attended, and afforded a season of more than usual interest. A larger number of interesting papers and reports were read than at any former meeting for several years.

All the proceedings and discussions were harmonious and cordial; the visits to the Medical Colleges and Hospitals interesting and profitable; and the social union of the members of the State Society with those of the Chicago City Society, at the residence of the Permanent Secretary, on Wednesday even-

The nature of the rubber itself, together with its lightness and its necessarily yielding form, (due to the manner of its construction) ensure against any undue pressure.

Finally, its perfect adaptation both to the anterior superior portion of the fissure, as well as to the posterior inferior and lateral parts, by means of the double flange of which mention has before been made, secures the control of the two pairs of muscles above mentioned, and generally of the levator palati also.

With these advantages in his favor, together with the additional one of the fixtures being held firmly in its place by means of gold attachments to the teeth, the patient proceeds to *learn* to talk, by learning the proper uses of the long disused or misused pharyngeal muscles, and the success of patients treated in this manner over those treated in any other is truly remarkable. One point more I will mention: by adopting this means of remedying congenital palatine defects, the operation can be performed much earlier than by the older methods, inasmuch as in the growth of the patient the fissure is enlarged longitudinally, and that enlargement can be easily provided against in the construction of the appliance; and thus by providing for the defect at an early period in life, much better results are obtained than by waiting until misuse has resulted in a permanent tendency to an imperfect pronounciation.

E. A. BOGUE, D.D.S.

Chicago, May, 1864.

Obstinate Constipation.—M. Homolle has found the following powder efficacious in two cases, where obstinate constipation had raised the question of operation for artificial anus: —Powdered strychnine, one-fiftieth of a grain; powdered nux vomica, one-fifth of a grain; calcined magnesia, six grains; mix. One powder a day at first, then two, and finally three per diem. In both cases the bowels were moved, and the symptoms of suspected internal strangulation disappeared.

SARGENT'S
ELIXIR CALISAYÆ FERRATUM.

This combination presents, in a new and permanent form, the important remedies, *Iron, Phosphorus, and Peruvian Bark*, united with aromatics.

Each tablespoonful represents 12 grains of the best Calisaya Bark, and contains in permanent solution 4 ½ grains of the Pyro-Phosphate of Iron, forming an agreeable aromatic Elixir, entirely free from the repulsive inky taste and color peculiar to ordinary combinations of Iron and Cinchona. The aromatics appear to render it more acceptable to the stomach, and to adapt it better to enfeebled conditions of that organ, while they add to the tonic properties of the Bark.

SOLUTION CHLORIDE OF ZINC.

THE BEST AND CHEAPEST DISINFECTANT EVER KNOWN!

Always useful and perfectly harmless. Invaluable in every sick room.
A luxury in every House.

LIQUOR BISMUTHI.

A permanent Solution, containing 8 grains Ter-Oxide of Bismuth in each fluid ounce. Dose—one teaspoonful. Considered equivalent to an ordinary dose of the insoluble Sub Nitrate.

It is slightly alkaline, and it is miscible with water without precipitation.

Prepared by **E. H. SARGENT,** Manufacturing Pharmaceutist,

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CHICAGO, ILL.

☞ Physicians supplied with all articles of the best quality obtainable.

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Special attention given to Diseases of the Eye and Ear.
Referred, by permission, to the Editor of this Journal.

THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., Editor.

VOL. V. JULY, 1864. NO. 7.

Original Contributions.

ARTICLE XXV.

REPORT OF SPECIAL COMMITTEE ON DISEASES OF THE EYE.

By E. L. HOLMES, M.D., of Chicago,
Lecturer on Diseases of the Eye in Rush Medical College, and Surgeon to the Chicago Charitable Eye and Ear Infirmary.

Presented to the Illinois State Medical Society, May, 1864.

Mr President—Gentlemen:

Your Committee would most respectfully report, that no contributions, either from members of this Society or from the Profession generally, have been received, although due notice of the appointment of this Committee was published in both medical journals of this city, with the request that the physicians of the State would aid the Committee in accomplishing the objects for which the Committee was appointed.

The following report, therefore, is composed entirely of materials collected in the personal experience of your Committee:

In the first part of the report is a classification of the diseases which have fallen under the observation of your Committee during the past eight years, and principally during the past five years.

The table may be supposed to present the relative number of cases of each disease, as found among patients, with affections of the eye in the North-west.

In the second part, your Committee had designed to furnish the history of several cases, which might be of particular interest to the profession; but thought best, without entering too much into detail, to ask the attention of the Society to some general principles, worthy of notice in the study of each class of disease.

Unfortunately, in several respects, the classification of diseases is imperfect. It is proper to state, that the numbers indicate number of patients and not of eyes affected.

This defect arose from the fact, that the annual reports of the Chicago Charitable Eye and Ear Infirmary, embracing more than 1400 patients, were prepared, not so much for scientific classification, as for the purpose of presenting to the public the number of patients treated, and the popular names of the diseases. When patients have been under treatment with each eye affected with a different disease, the most important alone was registered. And, whenever an eye was affected with several diseases, as, for instance, granular conjunctivitis, vascular cornea, trichiasis, entropion, or other complications, simply the primary disease has been recorded.

A few points in some sections of the following table, which may appear strange to members of the Society, will be subsequently explained:—

I. DISEASES OF THE CONJUNCTIVA.	
Conjunctivitis Granular,	628
do Catarrhal,	197
do Purulent,	32
do Neonatorum,	33
do Pustular,	114
do Morbillous,	21
do Diphtheritic,	3
Injuries and Burns,	67
Xerophthalmia,	4
Pterygium,	15
Pinguicula,	10
Ecchymosis (spontaneous),	4
Total,	1128
II. DISEASES OF THE CORNEA.	
Corneitis ulcerative,	109
Corneitis suppurative, Hypopion,	7
Onyx,	5
Abscess,	11
do superficial,	19
Staphyloma of Cornea,	26
Conical Cornea,	2
Motes on Cornea,	61
Opacity of Cornea,	64
Tumor on Cornea,	1
Total,	305
III. DISEASES OF THE SCLEROTIC.	
Injuries of the Cornea & Sclerotic,	45
Staphyloma of the Sclerotic,	2
Episcleritis,	2
Total,	49

IV. DISEASES OF THE LIDS.

Ophthalmia Tarsi,	34
Trichiasis,	40
Entropion,	19
Ectropion,	14
Hypertrophy of palprebral integument,	2
Abscess,	13
Hordeolum,	11
Cystic Tumors,	22
Eczema,	7
Symblepheron,	4
Wounds,	23
Warts,	1
Ptosis,	8
Lupus,	1
Œdema,	15
Nevus,	2
Molluscum,	1
Total,	217

V. DISEASES OF THE IRIS.

Iritis,	52
do syphilitic,	13
Irido-Choroiditis,	13
Occlusion of pupil,	15
Coloboma of iris and choroid,	4
Mydriasis,	3
Injuries of iris,	3
Adhesion of iris and lens (partial)	10
Total,	113

VI. DISEASES OF THE CHOROID, &c.

Choroiditis,	21
do (retinitis) pigmentosa,	22
Sclero choroiditis,	16
Staphyloma posticum,	4
Opacities of vitreous humor,	31
Coagulum in vitreous humor,	1
Glaucoma,	3
Total,	98

VII. DISEASES OF THE RETINA.

Retinitis,	20
do of Bright's Disease,	4
Congestion of Retina,	17
Detachment of Retina,	5
Atrophy of papilla of optic nerve,	3
Hemeralopia,	2
Embolie of central artery,	1
Cancer of retina,	5
Muscæ volitantes,	9
Extravasation of blood under retina,	2
Amblyopia,	32
Amaurosis,	35
Total,	135

VIII. DISEASES OF THE LENS.

Cataract, incipient,	13
do hard,	20
do soft,	17
do pyramidal,	1
do congenital,	12
do traumatic,	12
do layer,	6
Dislocation of lens (traumatic)	1
do do (spontaneous)	1
Total,	84

IX. DISEASES OF THE GLOBE.

Atrophy of the globe,	14
Fungus hematodes,	1
Hydrophthalmos,	2
Microphthalmos,	2
Sympathetic ophthalmitis,	8
Total,	27

X. DISEASES OF THE MUSCLES.

Strabismus,	19
Paralysis of 3d pair of nerves,	7
do 6th do	1
do 4th do	4
Blepherospasm,	2
Nystagmus,	12
Total,	45

XI. DISEASES OF THE LACHRYMAL APPENDAGES.

Abscess of the sack,	5
Obstruction of nasal duct,	20
Obliteration of the canaliculi,	1
Passage of air through do	2
Congenital fistula of sack,	1
Eversion of the punctum,	3
Total,	32

XII. DISEASES OF THE ACCOMMODATIVE APPARATUS.

Myopia,	8
Presbyopia,	3
Hypermetropia,	2
Asthenopia,	35
Total,	48

XIII. DISEASES OF THE ORBIT.	
Necrosis of the orbit,	1
Carcenoma do	1
Aneurism, do	1
Neuralgia,	5
Total,	8
Total of all diseases,	2289

From this table it will be observed, that diseases of the conjunctiva form by far a greater class, than those of any other portion of the eye. To this class may be added a large part of the diseases of the lids and cornea, since they are but sequelæ of conjunctivitis. A large number of blind patients, that have been examined, lost their vision as a result of this disease. And there are reasons for believing that a very large portion of the blind in the blind asylum, and other portions of the State, lost their sight from neglected or maltreated inflammation of the conjunctiva.

In many parts of Illinois and the North-west, these diseases are very common, and are the cause of more pain and misery than almost any other disease. Your Committee, therefore, believes it is the duty of every practitioner in the Western States to make conjunctivitis the subject of special study. Every opportunity should be provided medical students for the clinical study of these diseases and their treatment.

A few words regarding the causes of conjunctivitis at the West, are perhaps not out of place, though little can be said in addition to what has already been reported at previous meetings of this Society. The opinions, formerly expressed, were almost entirely founded upon the views and experiences of others, since there has not been, during the past eight years, a single epidemic of conjunctivitis in Chicago. An honored member of this Association, who has enjoyed a long experience and extensive opportunities of observation, has informed your Committee that, he believes epidemics of conjunctivitis are not dependent upon the prevalence of dust or upon dryness of the atmosphere, since they have often occurred when the prairies were covered with moisture. It is true, few places experience more violent winds, loaded with more dust, than Chicago; and yet, as has been stated, epidemic conjunctivitis is perhaps unknown in this city. Still, physicians generally seem to consider these agents as among the most active causes of the disease.

It is certainly to be hoped that all members of this Society, who may have an opportunity to observe epidemics of conjunctival inflammation, will report all facts, relating to the condition of the atmosphere, surface of the country, the habits and occupation of the patients.

One word only in regard to treatment. In ordinary uncomplicated cases of acute conjunctivites, your Committee is convinced that success in treatment depends principally upon the skilful use of caustic astringents. They should not be dropped into the eye, but applied directly to the mucous membrane of the lids, by means of a delicate brush, the secretions having first been removed by gentle applications of a bit of linen.

There is reason to believe, in the treatment of chronic conjunctivitis, that practitioners, generally, in the West, use these remedies too strong. Slight applications of the crystal sulphate of copper have given best satisfaction to your Committee in the largest proportion of cases.

Four typical cases of xerophthalmia have been observed. One was remarkable, as resulting from phlyctenular conjunctivitis. The patient was five years of age; the palpebral conjunctiva of the right eye was totally absorbed, and the edges of the lids brought in direct contact with the cornea, which was covered with a dry translucent membrane like parchment.

But three cases of true diphtheritic conjunctivitis have been noticed. Unfortunately, two cases in children terminated with almost total destruction of vision. Your Committee was discharged from the third case, in consequence of the unfavorable prognosis which was given. The subsequent history of the case is unknown. There is reason to believe that this disease, not uncommon in Europe, is quite rare in this country, although the corresponding affection of the throat is at times fearfully prevalent.

Nearly one-seventh of all the cases above-enumerated are affections of the cornea. Many interesting points, connected with these diseases, especially in children, are worthy of separate papers. Although quite a large number of the cases of corneitis in children were accompanied with caries of the teeth, only

four examples have been observed, in which the teeth have been notched, as described by Mr. HUTCHINSON. By far the greater part of the patients, affected with primary corneal disease have been of an unhealthy diathesis; a few cases only being in patients in whom the health was apparently perfect.

The treatment of certain injuries of the cornea and sclerotic will be discussed in connection with sympathetic ophthalmitis.

There have been but few cases of diseases of the lids, which have presented points worthy of remark in a report like this. One case of molluscum of the upper lid is mentioned as the only one ever observed by your Committee in his own practice or in that of others.

In the last report of this Committee, your attention was called to the treatment of certain forms of chronic conjunctivitis, recommended in the first volume of *Archive for Ophthalmology*, and in the annual report of PAGENSTECHER & SÆMISCH. This treatment, which consists in elongating the palpebral fissure, and in introducing vertical stitches through the integument and the orbicular muscle of the upper lid, has been found of special service in spasm of the lids, with tendency to entropion and union of the lids at the external angle.

Certain cases of trichiasis, attended with great atrophy of the palpebral conjunctiva and of the tarsal cartilage itself, have been found difficult to relieve. The bulbs of the cilia appear so deep and misplaced in the tissues that any efforts to remove them by scalping the edge of the lids, only add to the atrophy and fail to improve the condition of the organ. Fortunately, however, such cases are not frequent.

About five per cent of the patients treated, have been with affections of the iris. Your Committee has never attempted to conduct the treatment of iritis without the use of mercury, although high authority has shown that the disease may thus be successfully treated. Success with the use of calomel and large and frequent doses of atropin locally, have created an unwillingness to modify this plan of treatment. Excision of a part of the iris, as recommended by GRÆFE in chronic iritis, with attachments of the iris to the lens, has been performed apparently with great benefit in three cases.

Three cases of injuries of the iris are somewhat remarkable. Two are cases of detachment of the iris from the ciliary muscle, produced by slight blows upon the eye. The separation extended about one-eighth of the circumference—in one case in the upper and outer and in the other in the upper and inner quarter of the iris. In the former, recovery with almost perfect vision, but with a double pupil was the result. In the latter, there was a second pupil and a traumatic cataract. The other case of injury was even more remarkable:—A boy seven years of age, received the sharp point of a pair of scissors in the right eye, which penetrated the cornea, iris, and possibly the lens, near the middle of the lower and outer quarter of these organs. The wound in the cornea healed with a very faint nebulous cicatrix; the iris was left with a small but permanent opening at the point of injury. No opacity of the lens could be perceived. Vision remained perfect. The treatment was simply low diet, absolute rest, and wet compresses.

The classification of the diseases of the vitreous humor, choroid, and retina has been based entirely upon the abnormal changes, discovered by means of the ophthalmoscope. Whenever the line of demarcation between the papilla of the optic nerve and the retina has been indistinct, presenting the appearance represented by Table X, Figure 2, of LIEBREICH'S plates, and Tables X and XI of JAEGER'S, the disease has been classified as retinitis. In those cases where absorption and deposition of pigment have been observed, with or without the peculiar yellow-colored patches so often seen, the disease has been termed choroiditis. Ophthalmologists are apparently not all satisfied with the term retinitis pigmentosa. There is reason to believe in many cases the disease is an affection of the choroid as well as of the retina. In no instance has your Committee found this disease connected with consanguinity or idiocy, as observed by some writers.

Four cases of characteristic disease of the retina in patients affected with morbus Brightii, have been carefully studied. It is a matter of interest to ascertain the proportion of patients with this disease of the kidneys, who also suffer from amaurotic

symptoms. A large number of patients with amaurotic symptoms have applied for treatment, where an examination with the ophthalmoscope was not permitted. These diseases were simply recorded as amblyopia or amaurosis, and no treatment instituted.

Glaucoma is evidently not a common disease of the West. Only three cases of this affection and no others with dilated pupil and abnormal hardness of the globe has been observed in Chicago by your Committee.

As your Committee intends, at some future time, to make cataract the subject of a special report, nothing need be said at present upon the cases in the section of the above table devoted to disease of the lens.

Eight cases of sympathetic ophthalmitis have been observed with total loss of sight, in which perfect vision of one eye could evidently have been saved by the early removal of the eye primarily injured. Quite a large number of cases have been noticed, where punctured and incised wounds of the globe have been followed by long distressing inflammation of the eye. No treatment seemed to afford relief till after weeks and months of suffering the patients permitted the extirpation of the eye. It is true the majority of such injuries heal without these violent symptoms. And your Committee would not urge an indiscriminate mutilation of such patients. But is it not a question worthy of consideration, as stated in the last report, whether it is not better to sacrifice a sightless and inflamed eye, after due delay, than to endeavor to save the form of the eye simply, at the risk of total blindness? It is necessary to distinguish one very common form of sympathy, in these cases, from true sympathetic ophthalmitis. The first is simply a mild degree of irritation, with secretion of tears, and slight photophobia in one eye, when the other is excited, as, for example, by the pressure of a minute object under the lid. The other is a dangerous inflammation of the choroid, iris, and retina, which, if it has once commenced, there is reason to believe, is seldom relieved by the removal of the other eye. Hence your Committee would urge upon the general practitioner the propriety of operating before

this serious form of disease has supervened. Although the abscission of the cornea and iris is often attended with good results, the experience of many of the most celebrated oculists seems to favor the total extirpation of the eye.

One case of congenital fistula of the sack, in a boy seven years of age; and two cases in which considerable annoyance was caused by the passage of air through the canaliculi on blowing the nose, are simply worthy of mention, as being somewhat unusual. The operation of slitting the canaliculi, as recommended by BOWMAN in cases of eversion of the puncta, and the use of injections in the early stages of obstructions of the nasal duct, are among the most satisfactory operations in ophthalmic surgery. Your Committee, although unwilling, for slight causes, to sacrifice an organ, yet believes, in view of the want of patience and fortitude on the part of so many, especially the poor, suffering from chronic and neglected diseases of the duct, that much discomfort can be prevented by the obliteration of the sack.

No cases of more than ordinary interest in diseases of the muscles have been noted.

But few cases of anomalies of the refracting media have been under the care of your Committee. This is explained by the fact, that patients suffering from myopia and presbyopia usually apply to the opticians, rather than the oculist, for advice. Your Committee has not been in the habit of making careful examinations of eyes, affected with strabismus, in reference to the existence of myopia or hypermetropia, neither has he instituted suitable investigations to determine whether asthenopea was dependent upon weakness of the recti muscles, or upon hypermetropia—formerly termed excessive presbyopia.

Not a single case of astygmatism, or difference of convexity or density of the refracting media in different meridians, has been detected, although no investigations were made by your Committee till within two years.

The attention of the Society is called to the experiments upon the properties of the Calabar bean, as recently described in nearly all the leading journals of medicine.

A few remarks upon the status of ophthalmic literature in America, may not be inappropriate. Comparatively few works of merit, on diseases of the eye, have been written in this country. Nearly all our books are simply reprints of British works, which are now in many respects much behind the advance of science. Probably it is not too much to affirm, that in the English language there does not exist a complete and desirable text-book on diseases of the eye.

It is true, the works of MACKENZIE, LAWRENCE, and others, embracing valuable monographs, furnish the student with a vast amount of practical knowledge of many ophthalmic diseases. But they are not what the profession now demands—a complete work, corresponding, for instance, to that of STELLWAG, of Vienna, with a systematic arrangement of the diseases of each tissue, with its anatomy and physiology carefully and clearly discussed, as also the pathology of each abnormal process, followed by a description of the most approved treatment. There are in our country those, who with their own extensive experience and with their study of the works of GRÆFE, DONDERS, WELLS, JAEGER, in fact, of all the eminent writers in every language, are able to contribute such a work to our literature. It will require immense labor, but it is to be hoped some one will soon commence it.

The *American Journal of Ophthalmology*, edited by Dr. HOMBERGER, merits your support, and will most amply repay members of our profession for its perusal.

The attention of this Society is this year again called to the condition of the Chicago Charitable Eye and Ear Infirmary. This institution has now entered upon the seventh year of its existence, during which 1682 patients have been treated, 1272 with diseases of the eye, and 410 with diseases of the ear. The association consists of a Board of twelve Trustees, and a Board of two consulting and two attending surgeons. The operations of the Infirmary have thus far been much limited from want of means, which have been sufficient merely to furnish poor patients with treatment at its dispensary. The good which has even thus been accomplished is almost incalculable. Not unfre-

quently, however, patients have suffered from want of suitable diet and care and protection from exposure. It must certainly be a matter of interest to this Society, and to the profession generally, to learn that the Infirmary has been placed in a position, in which its usefulness, as is hoped, will be widely extended.

The president of the Board of Trustees, WALTER L. NEWBERRY, ESQ., has donated the lease of a valuable lot of land to the Infirmary, for the term of 10 years. A good and commodious building has already been secured for a hospital, and efforts are now made, by private subscriptions, to furnish it in such a manner as will be comfortable to patients and creditable to the city.

It must be understood that this charity, at present, consists in providing the poor with comfortable appartments and treatment for diseases of the eye or ear gratuitously. A small sum per week, hereafter to be determined, will be required for board, since the funds of the Infirmary are not sufficient to furnish this last to patients gratuitously. Efforts will be made in due time, to secure a fund for this purpose also. Will not the profession lend this institution the support and encouragement it merits?

At the last meeting of the Board of Trustees, the following resolution was passed: "That students of medicine be admitted to the Infirmary, with the privilege of studying diseases of the eye and ear, under such rules as the surgeons may from time to time deem best."

ARTICLE XXVI.

CEREBRO-SPINAL MENINGITIS.

Letter Read before the Chicago Medical Society, By JOHN BARTLETT, M.D., from DR. E. Y. YAGER, of Chillicothe, Livingston Co., Mo.

MAY 8, 1864.

DR. BARTLETT,—In compliance with your request, I will try and give you a rough sketch of cerebro-spinal meningitis, as it occurred in this county. Were I to consult my own feelings,

I should wait until more facts could be gathered, and give a more extended report.

Cerebro-spinal meningitis first made its appearance in this county the 1st of Feb., 1862, and continued until the 1st of May following. Except one case in Nov. and two in Dec. 1863, no more cases were met with until Jan. 1864.

The first cases occurred in Feb. 1862, in the 23d Reg. Mo. Vol., stationed in Chillicothe. Five soldiers were attacked in the morning, after having stood picket guard all night in the edge of a prairie. The snow was several inches deep. A storm had commenced the day before, which continued through the night. The air was damp and chilly, the wind from the East. A dense fog arose the evening before and continued until late next day. Of the five attacked three died in less than 48 hours,—two recovered after a protracted convalescence. I did not see these cases and cannot give their history. I heard they all became delirious in a very short time, and *the four* died comatose. The treatment I did not ascertain, except that no blood was drawn. Several others of the same regiment were attacked, and the majority died in a few hours.

Other cases occurred in the 3d Reg. M. S. M. Cavalry and a Battalion of Militia Infantry, stationed in this town. I saw three cases belonging to the 3d Regiment treated by Dr. May, and one of the same regiment by Dr. Cooper. The three cases treated by my friend Dr. M., were attacked the 1st of April, with chills and severe headache; high fever followed with increased headache. They complained in a short time after the attack, of soreness and pain in the muscles of the neck and jaws. In six hours the patients were delirious, with heads drawn back and rotated from side to side; tenderness along the spine; head hot; tongue coated with thick, dark brown fur in middle, and redness along tip and edges. The bowels were constipated. Two recovered, and one died in less than 60 hours. The treatment was commenced with a purge of calomel combined with ipecac, and followed by small and frequent doses of the same medicines. A blister was applied to the nape of the neck, extending down the spine some distance. The two

that survived, had a protracted convalescence. They fell into a low typhoid after a few days and did not leave the bed for weeks. One never recovered perfectly—still being feeble. Dr. COOPER'S case was very similar to the above cases, except a few hours after the attack, he had several spasms. He died comatose, 60 hours after the attack.

During February, March, and April, quite a number of citizens were affected, and several died. By far the heaviest mortality was among persons confined in the guard house for political offenses. My information is that not one recovered. I think there were five deaths in the guard house in a month. There never being more than a dozen or fifteen in the prison at one time, makes this a very heavy mortality.

But few cases occurred in this county outside of the town and township. The counties North suffered some during March and April. I have no data by which I can form an estimate of the number of deaths in Grundy, Mercer, and Harrison counties where it prevailed, but I learned from citizens that it was not very fatal.

Dr. J. E. CADLE, living in the North-western portion of this county [Livingston], treated five cases in March and April. Of the five three were girls, and two boys. Two were four years old, two six, and one twenty. Two girls recovered after a long convalescence,—one lost an eye, the other the speech. The three fatal cases survived from 4 to 12 days. These patients were taken with chill and headache and followed by fever, delirium, stiffness in the muscles of the neck and jaws; dilitation of the pupils in three, and contraction in two; tenderness from nape of neck to seventh cervical vertebræ; bowels constipated. The delirium was very violent after a few hours. Treatment was antiphlogistic,—blood-letting freely, calomel, tart. em't. and spirits nitre, counter-irritation to nape of neck and along spine.

He had also two cases in Dec. 1863, one a boy seventeen, and the other a girl, eight. Treated girl as the five. The boy was moribund when seen, and no medicine was given. He died in less than 24 hours,—the girl in 48.

In Jan. and Feb. 1864, Dr. C. treated thirteen cases of cerebro-spinal meningitis; seven were boys and six girls,—all between four and sixteen years old. Eleven were fatal and two survived.

The attack was ushered in by a chill and violent pain in the head, back, and extremities,—followed by fever in most cases and delirium; tenderness along spine and nape of the neck; difficulty in swallowing; head very hot, drawn back very much and rotated from side to side. In three cases there was no reaction, the patients died comatose in a few hours. Bowels in all costive; pulse weak and irregular; pupils dilated. Nine died in 24 hours; one the fifth week, and one the sixth. The two that recovered had a very protracted convalescence. The two that survived until the fifth and sixth week, after five days sunk into a low typhoid condition, and died comatose. The nine that died within 20 hours, were treated as the five cases in 1862, with the addition of bathing feet in warm water and mustard to extremities. The other five were not bled but treated otherwise the same.

The first case I saw was a boy 18 years old, the patient of another gentleman, who was absent from town when I saw it. The history I had of the case from the family was, that four days before he had a chill with severe headache and followed by high fever and violent delirium. The head was very hot and drawn back considerable. Tenderness along the spine; difficult swallowing; bowels constipated. The patient continued in this condition until the third day, when coma gradually came on. When I saw him four hours before death he was in a profoundly comatose condition, with stertorous breathing; pupils dilated; head drawn back very much; pulse one hundred forty-five, and very weak.

The second case was a brother of the above patient, aged 9 years. I was called Feb. 10, 1862, in the afternoon. The first patient died the night before. I found the boy suffering the most agonizing pain in the muscles of the right thigh, which changed to the patella in a few minutes, and then to the foot. It continued to change its location, never remaining longer than

an hour in any locality. Face was ghastly pale and *pinched;* complained of some pain in back of head which was hot and drawn back; tenderness from the occiput to seventh cervical vertebræ; pulse weak and irregular; some difficulty in moving head in consequence of the stiffness of neck. Bowels costive; tongue slightly coated in centre and red around tip and edges; pupils slightly dilated. The first symptom was pain in the arm, which had changed to muscles of the thigh. Patient never complained of chilly sensations at any time. Opened bowels twice with calomel and jalap, and then gave small doses of calomel and ipecac, with two grs. of pulvis Doveri, every two and a-half hours; applied mustard to back of the neck and down the spine. Saw him Feb. 11th, 9 A.M. Bowels moved twice early in the night. Rested little during the night; more headache; less general pain. Other symptoms as the night before. Applied blister to nape of the neck and along spine. Continued treatment. 5 P.M., patient little changed—mouth drawn to the left. Pulse rather stronger than before; face not quite so pale; continues to complain of some pain in the head. Blister was not used until in the afternoon.—Continued treatment. 12th, 9 A.M., patient slept two or three hours during the night; feels better; head and mouth less drawn; has but little use of the right leg; pulse has more volume. Continued powders every two hours. 8 P.M., patient doing well; took little broth; head and mouth less drawn; pupils less dilated. Continued every four hours the powders. Gave pulvis Doveri 2½ grs. at 9 o'clock. 9 A.M. next morning, saw patient; doing well; has a little use of the right leg. Gave powder of ipecac, Dover and nit. pot. Saw patient morning 14th; doing well; ordered powders given every five hours. Feb. 15th, patient convalescing; has little use of leg. This patient took a little quinine for several days after. He left his bed three weeks afterward. He used a cane for three or four weeks after leaving the bed.

The third case was the mother of the boys and aged 45. Her case was very much like the second. She was taken with chilly sensations, slight headache, and pain in the arm. The left arm

became weak as the leg of the boy. She was attacked Feb. 11th. The treatment was the same, with the same result. She was confined two and a-half weeks to bed. The arm gradually recovered its strength.

The fourth case was a servant woman, about 50 years of age. The woman was taken with chilly sensations and headache during the afternoon of Feb. 16th. The headache increased and fever set in towards evening. She spent a very uncomfortable night, suffering with pain in the head, feet, and hands, with soreness in the muscles, generally and especially in the muscles of the neck and back. Through the day following she continued to grow worse. I was called at 11 P.M., on the 17th to see her. I found her with the head drawn slightly back; pupils dilated; pulse frequent and weak; tongue coated, soft, and tremulous; bowels constipated; skin soft and relaxed. The most prominent symptom was the excessive sensitiveness over the entire body. There was not a fibre that was not most exquisitively painful on the slightest touch. The pulse was barely felt in consequence of the extreme sensibility. She suffered great pain in swallowing, and had difficulty in opening the mouth; shutting the eyes gave pain. The speech was very thick and imperfect. I could scarcely convey an idea of the extraordinary sensitiveness over the entire body. Gave ℥i. of oil to be repeated every two hours until the bowels moved well, and ordered an injection of sul. mag. after second dose of oil if the bowels did not move in one hour. The bowels moved twice four hours after first dose of oil. Give 1-3d gr. morphia, to be repeated every two hours unless she became comfortable, when it was to be discontinued. 17th, 8 A.M., scarcely so much sensitiveness,—otherwise the same. Used morphia every two hours up to present. Give calomel 4 grs., pulvis Doveri 12, ipecac 3, to be continued every two hours. 18th, 11 A.M., patient unchanged. Order treatment continued. 19th, 10 A.M., slept a little during the night and feels some better; pulse can be felt without giving much pain. Continued prescription with 6 grs. less of Dover powder and 2 of calomel. Her bowels moved twice during the night. The evacuations

were of a dark offensive nature. The patient during the afternoon gradually became stupid, until profound coma occurred, in which condition she died in the forenoon of the 20th.

I have not seen but two cases of cerebro-spinal meningitis this year. It has been almost entirely confined this year to the N. W. portion of the county. The two cases were almost identical. They were boys aged 8 and 10. Both were attacked Feb. 8th, in the afternoon, with a chill and pain in the head and stiffness of the muscles of the neck and jaws. After the chill wore off fever came on which did not run very high. During the night they began to complain of pain through the muscles generally, especially in the hands and feet. The morning found them with more pain in the head and very restless. Pain continued to increase during the forenoon, and by 3 o'clock the restlessness was so great that it was difficult to restrain them from leaving the bed. The older boy was seen by Dr. J. S. WILLIAMS on the afternoon of the 9th. He gave him a purge, calomel combined with a small portion of ipecac, to be followed after purgation with calomel in small doses combined with ipecac and pot. nit., applying ice freely to the head. The younger boy did not have any physician on the 9th. His father gave him three doses of calomel during the night combined with ipecac, applying a blister to the back of the head and neck. I saw both boys next day. The older boy was lying calm and composed; face extremely pale; pulse very quick and weak, intermitting once or twice in ten beats; head very hot, notwithstanding a sack of crushed ice had been to it for hours; head drawn back to an angle of 20 degrees; pupils dilated, and most exquisite pain given when any pressure was made along the upper half of the spine. Complains of severe pain in the head and in the right pectoral muscle. Bowels had been moved by the purgative given by Dr. W., during the night. The operations were said to be dark and offensive. The family report that he has been furiously wild from the early part of the night until 10 o'clock this morning, when he began to calm down. Ordered dry cupping along the back of the neck and down the spine, to be followed in six hours by blister if it did

not relieve the tenderness. Gave small doses of calomel combined with ipecac and pot. nit. every two and half hours. Feb. 11th, patient became restless and delirious soon after my departure the day before. The cups relieved him some. He continued delirious and restless until the blister was used. After it drew he seemed some composed and slept two hours. Head still drawn back; pulse more regular; more rational than during the night; less heat and pain about head. Continued treatment. Feb. 12th, patient rational this morning; had restless and delirious periods during the night; head less drawn back; pupils continue dilated. Continued treatment. 13th, 11 A.M., patient continues to improve. Ordered powders given every four hours. 14th, patient doing well. Continued powder every six hours. This patient had a little quinine for three or four days following. He continued to improve slowly and was able to leave the house in three weeks.

The course, result, and treatment was so much like the above that it is not necessary to speak of the younger boy's case.

This county (as is North Missouri generally), is noted for health. We have some intermittent and remittent fever in autumn and pneumonia in the winter. But the mortality, except in cerebro-spinal meningitis, is small. The epidemic of both 1862 and '64 was preceded by very cold weather. You will observe that no case occurred until after the commencement of the thaw. The wind was generally from the East and very chilly. There was a dense fog preceding both epidemics. At the time of its prevalence in 1862, there were quartered near twelve hundred soldiers in different parts of the town. They were very much crowded; whole companies in houses that were not capable of accommodating more than fifteen. Measles prevailed to an alarming extent among soldiers and citizens. There was a very large mortality attending the epidemic of measles, and later in the season pneumonia typhoides was very prevalent. I think there was no erysipelas that season. The quarters and hospitals were in the worst possible condition. Following the epidemic of 1864, we have erysipelas and pneumonia typhoides. Scarlatina of a mild form preceded the last

epidemic. By far the larger number of cases occurred in the N.W. part of the county. The majority of the cases reported by Dr. Cadle were children attending the same school. It is said more than half of the pupils died in less than a month. The schoolroom was habitually kept very warm. It was a country school, and of course the house was very deficiently ventilated. It has been observed by all physicians that the diseases generally have assumed an asthenic character since the first epidemic. I have no knowledge of the occurrence of a single case of cerebro-spinal meningitis in dry weather. It was invariably muddy and damp, the wind usually from the East. During the great prevalance both in Feb. 1862 and '64, there was a very peculiar feeling impressed on every one by the atmosphere. It was remarked the first epidemic. Persons predicted its occurrence in Feb., 1864, before it appeared, by the peculiar condition of the atmosphere. Almost every one felt rather full about the head. Epistaxis was common during both epidemics.

ARTICLE XXVII.

CEREBRO-SPINAL MENINGITIS.

By DR. McVEY, of Morgan Co. Ill.

Presented to the Illinois State Medical Society, May, 1864

Mr. President and Gentlemen:

The subject of cerebro-spinal meningitis has engaged the attention of the profession for the last fifteen months. Certain portions of our country have suffered from an epidemic bearing the name referred to above. However, I think the name not very appropriate, as some of the patients die before inflammation could take place. Inflammation may follow as a secondary symptom. But the most prominent features of the disease in question, at the commencement, are those of congestion and depression, indicating the presence of some toxic agent in the circulating fluid, and that agent seems to have a very strong affinity for the brain, destroying the vitality of the blood, and

overcoming the contractile power of the capillaries and vessels of the brain. Consequently, the circulation in brain is interrupted; the capillaries and the coats of the vessels in the brain expand to accommodate the accummulation of fluid in their structure, which is evidenced by the epistaxis that follow in some of the cases that recover. And, when reaction does take place, there is intense febrile excitement, with great restlessness and moaning. The eyes are suffused and the pupils are dilated. The patient is troubled with delirium, but, when aroused, for the most part answers questions correctly. Sometimes there are tremors of the whole body, one passing in succession after another. Sometimes there is squinting of one eye. The countenance has a brown hue. The tongue is slighted coated at the start, but, as the disease progresses, becomes thicker. The bowels are constipated. The patient vomits a dark grumous substance. The posterior cervical muscles contract and draw the head backwards. Sometimes there are petechia over the neck, breast, and extremities.

I have seen patients die within six hours after they were taken with coma and prostration, the circulation giving out first, intellection next, and lastly, respiration, without any febrile reaction whatever; but, in the majority of the cases, reaction does take place in about six hours after the attack.

In regard to treatment, the most successful I have met with has been cerebral and arterial stimulants, with arsenic as an anti-periodic. It is of the utmost importance to arouse the capillaries and vessels of the brain, in order that they may relieve themselves of the fluid accumulated in their structure, and I know of no better agent than opium to do it with. Under the foregoing treatment, I have had six patients recover, and three died. My partner, Dr. Brown, says he has treated, in the last six months, twenty-one cases, five of which were fatal, and sixteen recovered. If the symptoms are severe, viz.: Coma, muscular contraction, with pain in the limbs, back, and head, I have given opium in large doses, say to an adult, from 4 to 5 grains; arsenic freely, usually Fowler's solution, from 6 to 8 grs. every four hours; and where the muscular prostration continued for a

considerable length of time, strychnia; alteratives moderately, keeping the bowels open with mild aperients, invariably applying friction to the surface; tincture capsicum and alcohol freely, with turpentine to the spine; sometimes blisters to the neck.

Convalescence is generally slow. Quinia, I think, contra-indicated, unless it is in very small doses, for the reason that it increases the agitation, and produces a certain amount of deafness, with high delirium. Probably, after the violence of the disease has passed off, it may be given with impunity, but not until the tremors have subsided, and the brain is so relieved that there is no danger of producing congestion of the eyes and ears; after which time it may have a salutary effect upon the digestive organs, and by giving tonicity to the system in general.

ARTICLE XXVIII.

NOTES OF A CASE OF CEREBRO-SPINAL MENINGITIS.

By D. W. YOUNG, M.D., of Aurora, Ill.

Read before the Aurora City Medical Association.

GENTLEMEN:—Since the last meeting of our Association, I have seen and treated a case of cerebro-spinal meningitis, and I now respectfully ask your indulgence while I read you my notes of the case. I shall be particularly minute, and relate all the minutia of symptoms and treatment; hoping thereby to incite to discussion and, if possible, elicit some new idea and facts concerning this terrible disorder and its treatment. I have no special theory or suggestions to advocate. I shall only communicate facts, and allow you to draw your own inference. I have read everything that I can find in my medical books and journals, and regret that I can find only a little—that is tangible and useful in managing this disease. My reading has forced me to the conclusion that, a greater portion of our medical authors and older practitioners are unacquainted with the disease. Therefore, I claim that it behooves us to

seek, investigate, and record every fact that we can find bearing upon this subject. I assure you, gentlemen, you will need all your knowledge when you come to treat cerebro-spinal meningitis.

Saturday, March 26, 1864. I was called over into the North end of Will County, to see Thomas C., a Scotch boy, aged 15 years. Although he was only 15 years old, he measured 6 feet and 2 inches, and was well-proportioned, in a word, he was a giant on a small scale. I arrived at his place of residence about 2 o'clock P.M., and found his parents, brothers, and sisters in a very high state of excitement. They informed me that they had buried one son, next younger than this one, a few days before, who had died with what the doctors called spotted fever; and that this boy was attacked and acted just as the other had in the commencement of the disease—and they apprehended the same result. They also informed me that they had not told the patient that they had sent for the doctor, but would now tell him of my arrival, and then I should see him. The father retired, and after a few moments returned and conducted me into a large well-ventilated bedchamber, where I found the young Scotch giant in bed, with the following symptoms:—skin moderately hot and moist; pulse 68 per minute, slow and soft; eyes red and suffused; tongue dry and covered with a thick yellow coat; respiration a little hurried; no cough nor pain in the chest; bowels have not moved for two days; urine free and very high colored; some slight pain and stiffness in occipital and cervical regions. He complained of a peculiar soreness and sensitiveness extending all over him. It seemed to cause an uneasiness even to touch his hair. He said that he had not been well for several days; appetite had been poor. He had slight chills, with more or less shifting pain in the extremities. A general uneasiness and listlessness. On Friday afternoon, he had a distinct chill, followed with fever and a good deal of pain in the head and back of his neck. Was restless during the night, and had slept but little. A few hours before my arrival he had vomited freely, which relieved the pain in his head decidedly, and he was feeling much better. Said he thought it

had been very foolish to send for a doctor to see him, as he was feeling so much better now; and he thought should get right along without any further trouble. After having examined the case thoroughly, as I thought, and reflected upon the symptoms, I informed the parents and friends that I could not discover anything alarming in the symptoms there present; and that I really hoped their fears were ungrounded. It was my first case. I was not fully acquainted with the deceptive intermission of the disease. They said, that the other boy had acted just so, as well as all the other cases that had occurred in that neighborhood, and that they had all died; therefore, I determined to be cautious and guarded in my prognosis of the case.

I ordered them to soak his feet thoroughly in hot mustard water, and also to apply a large mustard sinapism to the nape of his neck and down the spine. And ℞. Hydg. sub murias, grs. xx., Soda bicarb., grs. xij., Pulv. rhei, grs. v. Mix, and give immediately. And left him Quinia sulph., grs. xxx., Pulv. Doveri, grs. xx. Mix, and divide into five powders, and give one powder every three hours after the bowels have moved. Keep a cloth, wet in cold water, on his head, and give him warm drinks. If the bowels do not move in four hours, give him an ounce of castor oil. Thus I left him, with instructions that if anything occurred to let me know immediately. About eight o'clock in the evening, a messenger came, running his horse, saying that he was much worse, and that they desired my attendance as quick as possible. I started immediately; and arrived at their house a little after two o'clock. When I was fully two rods from the house, I heard him screaming; and when I entered his chamber I found things very different from what I left them, a few hours before. Now, he was sweating profusely; head thrown back upon his neck, and the muscles of his neck so rigid that it was impossible to move his head without moving or turning his body also; pulse variable, sometimes 80 to 90 per minute, then again so frequent that I could scarcely count them—these alternations occurred quite often; eyes very red and suffused; pupils changeable, but unaffected by light—sometimes they were dilated largely, and then within a few

moments would contract down almost to a point; respiration hurried and sighing; bowels have not moved; he has voided his urine twice since my first visit; the pains in his head and neck seem to be decidedly paroxysmal, they come on suddenly and then he clasps his head with both hands and screams terribly. Soon after I left, in the afternoon, they substituted a large blister for the mustard to the nape of the neck. The blister has drawn quite thoroughly and is well filled. He is about semi-comatose, very restless, swallows with difficulty. Scarrified thoroughly along the spine, below the blister, and drew from four to five ounces of blood; then covered the scarrified surface with a new poultice covered with powdered morphia; enclosed the head in powdered ice; gave an enema of soap suds, castor oil, and turpentine. Also, one of the quinine powders immediately. Also, x gtts. of fluid extract of belladonna and xv gtts. of fluid extract of hyoscyamus every two hours. Fed him freely of Bourbon whiskey saturated with chlorate of potassa. I know that my directions were followed punctually to the letter, as I did not leave the bedside of my patient at all, but watched everything and every symptom closely all the time, determined to see if I could not detect something that might throw some new light upon this particular malady. 12 o'clock midnight.—All the symptoms about the same; bowels have not moved; repeated the enema; and continued the other treatment. 4 o'clock A.M.—No better; symptoms about the same; surface a little cooler, and a little blue denoting capillary congestion. Placed bottles filled with hot water about the patient and added capsicum to the prescription. Continued other medicines as before. Sunday morning, 8 o'clock.—No better; head is hotter and extremities colder. Repeated the cups to the spine and back of the head over the mastoid processes; repeat the enema. Retains the enemas, but the bowels do not act. He retains the medicines and stimulants well. No nausea. Still screams occasionally, and grasps his head with his hands frequently. Applied the cups to his temples, and drew blood freely. Continued the other treatment. 12 o'clock M.—Is no better; head symptoms are in-

creasing; pupils are dilated, either from effusion or from the belladonna; he is more restless; bowels are rumbling freely; repeated the enema and continued the other treatment.

3 o'clock P.M.—Bowels have moved freely; he is more quiet and rational; skin warmer and moist; pupils still dilated; pulse 120 per minute; respiration sighing; do not think the muscles of the back of his neck are quite so rigid; complains of severe pain in the back of his head and neck; continue all the treatment.

Sunday evening, 6 o'clock.—Patient seems better; he has slept some, and is warmer and sweating freely; called for the vessel and voided his urine, which is very high colored, and has a decidedly ammoniacal smell; he says he feels better, and that his head does not ache much now; pupils still dilated; pulse irregular; respiration is slow but sighing; continue treatment.

Sunday night, 10 o'clock.—Patient not so well; head is hotter and surface colder; more restless and screams again; muscles of the neck not much rigid now; he throws himself about constantly; respiration irregular and sighing; does not answer questions as correctly; calls his friends, and says "come, let's go home." I repeated the cups; drew more blood, and continued all the other treatment energetically, but to no purpose. He grew worse; his head became hotter and thrown back again, and became more rigid than ever; had a few tetanic twitchings of the muscles, and died at 2 o'clock on Monday morning. I could not secure a *post mortem*. Thus, gentlemen, you have the particulars of the case and treatment. He died. Did I treat him right? Please give me your views of the case—and the disease.

ARTICLE XXIX.

HISTORY OF THE SYMPTOMS OF DR. J. P. F. PREVIOUS TO DEATH,

BY LETTER FROM DR. CLARK;

ALSO, SYNOPSIS OF NOTES TAKEN AT THE *POST MORTEM.*

By HIRAM WANZER, M.D., of Chicago, Ill.

Communicated to the Chicago Medical Society. May 20, 1864.

Dr. John S. Clark states as follows:—Was consulted by a friend of Dr. Jacob P. Fuller, on the 9th May, who thought he was becoming insane. From the description of the case I thought so too, and advised his removal to the asylum.

Two or three days after, I saw him in the street. My attention was drawn to him by his nervous and excited manner. On Sunday, the 15th, was called to see him, about 1 o'clock P.M. Found him lying upon a sofa; head on pillows; and breathing peculiarly. Some half dozen short, light, easy respirations, and then a deep one, with a noise as of strangling; his lips were livid; pupils contracted; pulse 80 and regular. He was in a state of profound stupor. Had him placed in the middle of the room, with his head and shoulders elevated, and all the windows and doors open; dashed his head with cold water, and covered his legs and feet with mustard plasters. Fearing some narcotic poison, tried to use the stomach-pump, but could not, owing to the tube, which was old, and softened as soon as warm, collapsing. Then gave an emetic of sulphate of zinc, which took half an hour to give, for fear of strangling. All this time his feet and legs were bitten by the mustard; his hands and arms were thoroughly rubbed and slapped; the emetic did not operate. The stupor continued; and from the beginning to the end of the case, there was not the least sign of consciousness. The respirations became more difficult and often ceased altogether, for an interval of a minute or so, then rallying with a great gasp. At such times the pulse would falter, and fall as low as 36, about five hours after being taken; large quantities

of pink-colored frothy mucus was forced out of the mouth and nostrils, and continued for over an hour to flow quite freely; at this time the pulse at the wrist had ceased.

At 8 o'clock he died. J. S. CLARK, M.D.

No. 333 *North Wells Street.*

MR. PRESIDENT AND GENTLEMEN:—It was my privilege, on Monday evening, this week, to assist Dr. HATCH at a *post mortem* upon the body of Dr. J. P. F., dentist, aged 24. Autopsy revealed death from cerebral apoplexy or hæmorrhage of the brain. No serous effusions were found upon removing the calvarium; no external lesions, ecchymosis, or abrasions whatever were found to indicate the cause of death from outward violence. The dura mater was apparently normal; the arachnoid and pia mater were adherent closely to it by previous plastic inflammation. The cerebral surface of the pia mater was covered with a layer of sizy blood, indicating there had been at one time active meningitis. The second pathological condition discovered was a quantity of coagulated blood around the optic nerves, optic commissures, optic tracts, which in my opinion did account for paroxysmal pains over the orbits, frequently amounting to agony. During such periods, he would throw the hand to the forehead and with its palm make pressure at that point. There were clots at different points in both cerebral hemispheres all that we discovered. There was especially one large clot extending over the floor of the right lateral ventricle, covering part of the velum interpositum, thalami optici, and corpora striata. The blood might have proceeded from the venæ galeni, choroid plexus, and veins of the corporis striata. The various clots throughout the cerebral hemispheres assumed different colors, indicating those lesions were not all recent. The cerebral substance was nearly unaltered in color, save at those points of extravasation, and I think generally whiter than normal and softer in consistence. The exceeding hurry and lateness of the hour forbid our making as thorough an examination as we desired; for I think the microscope would have revealed changes in the arterial and venous coats, perhaps fatty degeneration of their texture, and pus globules in their channels, and

other pathological changes in the cerebral texture our natural eyes did not nor could not detect.

It was our opinion that there were found in the brain pathological changes sufficient to cause death, without examining further other organs essential to life. That those blood clots imprisoned within the cerebral substance had so interrupted the functions of the brain as to cause those symptoms and his early and much lamented death. For several weeks previous to his dissolution, his friends noticed at times peculiar signs of delirium. One habit he acquired of constant expectoration of frothy, colorless mucus; also, occasional incoherent talking. He had frequent forebodings and hours of mental despondency. His mind wandered frequently upon unreal objects, often apprehensive of his professional friends, imagining they were trying to destroy a professional existence he was struggling to establish. At times he apprehended his dearest friends were mixing poison with his food, and it is said he once went to Detroit for his dinner to avoid being poisoned. He occasionally refused all nourishment except from the hands of one very dear and valuable friend in whom his confidence was only separated by death. He suffered frequent tingling prickling sensations in the extremities, significant of approaching paralysis. There was a peculiarity noticed in his walk—his head bowed and eyebrows knit as though he was in deep meditation. At times he was very irritable and irascible in temper. This irritability always appeared beyond his control. The carotids and temporal arteries would then beat vehemently. The vessels of the head and face would become suddenly injected—the skin of a firey red color.

Might not a series of those paroxysms of morbid excitement, causing such rapid determination of blood to the brain, have induced rupture of attenuated and diseased bloodvessels, causing those extravasations within the cerebeal substance, at various periods. As from the appearance of the blood clots some were old, others recent, coupled with an abiding sub-acute meningeal inflammation, causing the effusion over the cerebral surface of the pia mater. The opinion of the Society is solicited.

ARTICLE XXX.

SUB-CUTANEOUS INJECTION OF QUININE FOR THE CURE OF INTERMITTENT FEVER.—WHO IS ENTITLED TO PRIORITY IN THE PRACTICE?

PROF. N. S. DAVIS, *Editor Chicago Medical Examiner:*

SIR—Enclosed you will be pleased to find $2.00 for the *Medical Examiner* of 1864.

In the November number, 1863, of the *Medical Examiner*, page 583, I find an article reprinted from the London *Lancet*, penned by W. J. Moore, in Bombay Medical Service, dated Bombay, 1863, wherein he states: "and I have latterly employed a strong solution of quinine for the cure of intermittent fever by the method of sub-cutaneous injection." He is desirous in consequence of the success which has attended the practice to call the attention to this "novel mode of using quinine;" further he says, "since the period I commenced to use quinine in this manner, I have been surprised and pleased to find in one of the Medical Periodicals that the same plan has been pursued by Dr. Chasseaud, of Smyrna, who reports 150 cures, and especially recommends the system in fever complicated with gastric symptoms, when the exhibition of quinine by the mouth is often inefficient, difficult, and hazardous." You will please to recollect that in your presence, at the 12th annual meeting of the American Medical Association, held in Louisville, Ky., in May, 1859, I read a paper on "Sub-cutaneous Injections of medicines in general, and especially of preparations of Peruvian bark in intermittent fevers and other diseases."

At the same meeting a committee was appointed to report at the next meeting. See transactions of the 12th annual meeting of the American Medical Association. By this the profession has evidence of the fact that more than *four years* prior to any notice of Dr. Chasseaud, of Smyrna, and Moore, of Bombay, I had published and circulated my paper on sub-cutaneous injections of medicines in general, and especially of preparations of Peruvian bark in intermittent fevers, and other dis-

eases, and that nearly a year prior to my publication I had practiced it with the best of success; also, that a lengthy communication of twenty-four columns on *hypodermic medication, and cases thus treated mostly with a solution of sulphate of quinine*, was published in the New York *Medical Press*, of June 16, 1860, Vol. III, No. 25, then edited by Drs. Kiernan and O'Meagher, now surgeons in the U.S.V. Army.

I have waited six months, patiently, to see at least those medical papers who were cognizant of my articles in 1859-1860, and who published, the articles mentioned above, in the *London Lancet*, 1863, do justice, if not to me at least to the history of medicine, and to themselves, by either correcting the statement "THIS NOVEL (1863) MODE" *of using quinine*, or by stating by whom and when the first known use was made, and the first public notice was given. Please insert this in the May number, with such comments as you see proper.

Yours, with sincerity,

DR. IGNATIUS LANGER.

Davenport, Iowa, April 26, 1864.

Selections.

CASES OF GASTRALGIA AND IRRITABLE STOMACH; USE OF THF PURIFIED OXIDE OF MANGANESE.

From the perusal of Dr. Leared's observations on manganese as a remedy in disease of the stomach, Dr. Rogers was led to make a trial of this drug in cases of obstinate dyspepsia. Two of the patients in the following cases suffered from gastralgia; one from uterine derangement and sympathetic irritation of the stomach; and in the fourth, the discomfort after meals was probably caused by exalted sensibility of the mucous membrane in the manner described by Dr. Leared.

M. S., aged twenty-nine, a florid-looking married woman, had been under treatment for severe pain at the scrobiculus cordis,

with occasional vomiting, since the latter part of November, 1863. Various remedies had been tried, none of them affording more than temporary relief. Dr. Rogers prescribed for the patient oxide of manganese in doses of ten grains three times a day.

Jan. 12th.—There was some difficulty in persuading her to persevere with the medicine, as she complained of its extreme "grittiness."

15th.—Has had no vomiting; less pain. To leave off eating supper, but before bedtime to take a dose of the mixture.

19th.—No pain after meals yesterday; bowels costive. To take a senna draught immediately.

29th.—Has not felt so "light and cheerful" for months, and is full of profuse expressions of gratitude. No nausea after taking the medicine.

Feb. 9th.—Discharged cured, but recommended to continue the mixture once a day for another week.

J. C., aged thirty-four, employed in the main drainage works. Had symptoms very similar to the above, for which he had been treated early last autumn at the hospital, but soon discontinued his attendance. He came again on Jan. 19th, and attributed all his "queer pain" to the beer he drank, but could not make up his mind to forego his favorite luxury. The manganese was given in doses of ten and fifteen grains three times a day, the diet not being altered in the least. On the 9th of February he was discharged well, having taken altogether sixty-two doses of the manganese.

H. D., aged twenty, a young woman of nervous temperament. Suffers from leucorrhœa, and a few months since was in the hospital under the care of Mr. Bird, who removed a vascular excrescence from the urethra. In addition to leucorrhœa, she complains of hypogastric pains, disrelish for food, and considerable thirst. There is a constant pain at the epigastrium, and occasionally rejection of the food immediately after it is swallowed. Dr. Rogers contemplated giving the oxide of silver, but the manganese has already done so much to relieve the gastric irritability that it is hoped a persistence in its use will effect a cure.

The fourth case is that of A. G., aged twenty-four, a laundress, who had constant heartburn and great discomfit after every meal, most likely attributable, as before stated, to unduly exalted sensibility of the mucous lining of the stomach, arising either from an irritable condition of the nervous filaments, or from excessive secretion of gastric juice, accompanied by

increased vascularity. This patient was also troubled with shifting rheumatic pains. The uterine functions were regular; the bowels rather costive; tongue dirty. Bismuth gave no relief, and the mineral acids and bitter tonics were tried, but with no good effect. At times she was compelled to leave off work for a week together. Hydrocyanic acid and soda palliated the symptoms, but she was soon as bad as ever. On the 15th of January she commenced taking the oxide of manganese in ten-grain doses three times a day, and steadily continued it up to the 9th of February, when she stated that she was free from all uneasiness, and was about to take a new situation.

These four cases which are not picked ones, but such as come before the hospital physician every time he attends in the out-patient rooms, are intended further to illustrate the effects of a valuable agent which Dr. Leared has already so successfully employed in the treatment of forms of certain dyspepsia. Its comparative cheapness is, as Dr. Leared says, a great recommendation for hospital practice. Independently of this, however, there is a strong probability that Dr. Leared is correct in affirming its superiority to bismuth in many cases of gastralgia.

At the West London Hospital the purified oxide of manganese is procured as originally recommended from Messrs. Garden and Robbins, of Oxford street. It has not yet been exhibited in the form of powder, but as a draught; the compound tragacanth powder being used to suspend the manganese. It may be as well to mention that Dr. Neligan has recommended the *sulphate* of manganese in dyspectic affections and bilious disorders, not with a view of sheathing the mucous surface denuded of its epithelium, which is Dr. Leared's aim, but of promoting increased biliary secretion.—*London Lancet.*

ON A NEW OPERATION FOR OBTAINING UNION OF AN UNUNITED FRACTURE, WITH REMARKS ON ITS APPLICATION IN CERTAIN CASES OF RECENT FRACTURE.

By E. R. RICKERSTETH, F. R. C. S., Surgeon to the Liverpool Royal Infirmary.

In bringing this subject before the attention of the Society, the author proposed to mention some cases that had occurred in his practice to show the successive steps by which he arrived at the process in question. He had frequently tried, in vain, friction, accupuncture, and subcutaneous division; and though re-

section of the ends of the bone had been successful in some instances, it was a proceeding involving a considerable risk of life. Dieffenbach's method had proved to be more successful; but this operation, though conducive to the formation of new bone, in no way provided for what was of paramount importance —viz: absolute immobility of the opposing fragments. The large external wound and injury done to the soft parts in introducing the ivory pegs were also objections to this operation. Recognizing the happy influence of Dieffenbach's plan of exciting ossific deposit, and, at the same time feeling the importance of keeping the ends of the bone in a condition of absolute immobility, the author was induced to try a modification of the operation; and in the case of a man admitted under his care at the Liverpool Royal Infirmary, with an ununited fracture of the radius, he drilled a hole through the ends of both fragments, and, passing a stout wire through it, secured the bone in perfect apposition. Union took place in seven or eight weeks, but on endeavoring to remove the wire, so much traction was necessary that it caused the fracture again to be ununited. This difficulty of removing the wire induced the author to think of some other plan not open to this objection; and in the case of a man with an ununited fracture of the thigh, by means of a common Archimedean drill, he bored two holes in such directions that each passed obliquely through both ends of the fractured bone, and into each introduced a steel rod with a screw at the end. To do this it was necessary to make an incision three inches in length. Much constitutional disturbance followed, the wound suppurating freely. In ten weeks the splints were removed, but no union had taken place. The limb was then confined in gum-and-chalk bandages. Symptoms of pleuro-pneumonia came on, and he gradually sank. A *post mortem* examination showed tubercular deposit in the ends of the bone and other parts of the body. There was no attempt at repair at the seat of fracture, except where the drills had pierced the bone, and here there was a deposit of new bone. This proceeding showed that it was quite feasible to fix the bone in the manner described, without exciting too much inflammatory action; and also that the steel rods caused the formation of new bone.

The next case was a fracture of the lower maxilla, where the bones had united in such a position as to render the patient a most unsightly object. As the incision that would be necessary in this instance, for the purpose both of putting the bone into proper position and removing the deformity of the soft parts, would not allow the use of external splints or supports, and as

it was found impracticable to effect this object by fixing the teeth by an appliance within the mouth, it was absolutely necessary that some means should be devised by which the divided portions of the jaw could be securely fixed; and it occurred to the author that pegs or nails would answer the purpose, especially as he had already observed their presence caused so little inconvenience. Accordingly, at the operation, the plan just mentioned was carried out, and the apposition of the fractured portions was secured by means of two round-headed nails. They most effectually answered their purpose, and no external splint or bandage was required. The case did well, no undue action being set up. On the twenty-second day after the operation, one of the nails came away. The patient left the infirmary perfectly well, the jaw being firmly united in its proper position, and the deformity of the soft parts removed. One of the nails still remained in; and the last account states that its presence caused no inconvenience.

The third case recorded was one that presented many points in common with the one just narrated. No external incision was made, and ordinary drill heads were substituted for nails. The result was everything that the author could have wished.

These cases show how readily and with what good effect fractured bones may be fastened together. Surgeons have ever recognised the use of sutures with regard to the soft parts.—Why should we not, in cases of difficulty arising from an inability to keep the surfaces in proper apposition, adopt the same plan with the bones? Might not this process be applicable in some cases where division of the tendo-Achillis is required, or where such an operation as sawing off the ends of the bone is indicated? From a consideration of the cases narrated, Mr. Bickersteth proposed to treat an ununited fracture by passing one or more drills through the broken ends of the bone in such a manner as to secure their perfect immobility, and without making any external wound beyond that caused by the entrance of the drill. The limb should then be secured by properly adjusted splints, and kept at perfect rest. After two or three weeks the drills may be removed, and water-dressing applied to the punctures. For several weeks after, it would, of course, be desirable to continue the use of the splints. In conclusion, the author begged to place upon record three cases of ununited fracture recently treated by his friend, Mr. Fletcher, on the plan that he (Mr. Bickersteth) had suggested, and in each the result had been most satisfactory.

Mr. Fergusson said that he scarcely remembered to have heard

a paper of greater surgical interest than the one just read. It had the merit of bringing out much that was going on in the modern practice of surgery, and he thought the paper would lead to greater improvements in practice. Here was further proof, he continued, of the advantage of wire and metal in instances in which in former times we were loth to use such materials. He had had the impression that ivory pegs, being softer, would be less likely to do harm; but now the author had shown that metal might be safely used. And it had been shown, too, that the commoner metals were as useful as the rarer; that iron wire was as useful as silver wire. In the same way, cauterization by an iron instrument was just as useful as by a gold or silver one. Dieffenbach had used the pegs of ivory to create irritation only, but the author had gone further, and fastened the bones together by pegs of iron. The author had shown that much might be done in desperate cases of ununited fracture. From hearing the cases related by the author, he should consider that the plan was safe, and that it ought to command attention. Mr. Fergusson said that he once say Mr. Abernethy attempt to pass a seton between the ends of an ununited fracture. Failing to do so, he left a probe sticking in the wound between the ends of the bones. The result was good.

Mr. Holthouse thought the interest of the author's plan was not only in fastening the bone together, but in doing it subcutaneously. This was a great merit, and no doubt would lead to the adoption of the plan and to beneficial results in practice. Mr. Holthouse then gave the particulars of a case of ununited fracture of the humerus under his care at the Westminster Hospital, in which he had adopted the novel proceeding of inserting the sharpened end of the lower fragment into the cancellous structure of the upper, thus imitating an impacted fracture.—This plan, however, did not succeed. The case was, however, a complicated one, there being anchylosis of the elbow.

Mr. Holmes Coote rose to correct what he believed was a very general and erroneous impression as to the views of Dieffenbach. This surgeon used to cut down to the ends of the bones and pass in ivory pegs, with the hope of creating irritation; but, if he could do it easily, he used also to fasten the ends of the bone together. Mr. Coote thought that three classes of cases ought to be distinguished: first, those in which there was union in good time; second, those in which union was simply retarded; and third, those in which union could not be obtained, as the ends of the bones were in a state of fatty degeneration. In the third class no good results could be hoped for.

Mr. Curling regarded the author's plan as ingenious, as a happy application of the modern treatment with metallic substances and as calculated to be of great service, not only in ununited fractures, but also in compound and in complicated simple fractures, when it was difficult to keep the parts in position. He was struck with the remark in the paper that the author had met with numerous cases of ununited fracture. Though Mr. Curling had been long attached to a large hospital where a great many fractures were admitted, he had seen only a few cases of ununited fracture, and all of them had been brought to the hospital in that condition, most of them being the result of accidents which had occurred at sea. The author, being surgeon to the principal hospital in the chief seaport city in this country, probably met with an unusual number of such cases. Mr. Curling had seen, however, many cases of delayed union, and mentioned two remarkable cases of the kind, one a double fracture of the thigh, which happened at sea seven months before, and might have been considered an ununited fracture, but which got firm in a plaster of Paris case. He called attention to a constitutional indisposition to ossific union, independent of the general health, which was manifested in young people as well as in adults, and gave an instance in point of long delayed union in a fracture of the tibia in a girl.

Mr. Barwell, while agreeing with what had fallen from Mr. Holmes Coote concerning the degenerated condition of bones, considered that such condition was the result, more frequently than the cause, of non-union. It was a law of animal nature that any organ losing its functions should degenerate. Thus when a bone lost its power of support, the surrounding muscular pressure and other conditions of its healthy life, it would surely degenerate; but until that degeneration had reached a high point it might still be restored. A remarkable case had occurred to him lately, which would also show that in certain instances the admirable plan proposed by Mr. Bickersteth would be unavailing—as in cases where the non-union was produced by a large quantity of soft parts intruding between the fractured ends. The case alluded to was as follows: About eighteen months ago, a man broke his arm about two inches and a half above the elbow. He was admitted into the Charing Cross Hospital. The fracture united well, and the man was discharged cured. The same night, however, he got very drunk, and broke his arm again, but took no notice of the circumstance, continuing drunk for about a fortnight. Two months ago, he again entered the Hospital with a broken arm. As Mr. Barwell had

been for some time taking the duty of his colleague Mr. Canton, this case came, about a fortnight ago, under his observation, and he determined to operate. The upper and longer fragment was on the outer side, its lower end overlapping the head of the radius. The inner end of the lower fragment was half-way up the inner side of the arm. The movement to and fro of this portion was very considerable; but there was always a wide interval between the two bones, which was occupied constantly by the anterior brachial muscle, sometimes also by part of the biceps, and in certain positions it seemed as though the artery and nerve also got between the fragments. The man having been placed under the influenee of chloroform, Mr. Barwell made an incision two inches long over the outer fragment, and, turning out its end, sawed out a wedge-shaped piece, so as to leave an angular gap or notch in the end of the bone. The inner fragment lay so far away from the wound, and in such close proximity to the artery and nerve, that the greatest care was required in getting its end to protrude at the wound. This, however, was accomplished without any untoward accident, and the end was cut into a wedge shape, so as to fit with some degree of accuracy the interval in the upper fragment; traction was made upon the arm, and the two portions fitted together, and with the aid of a splint they retained perfect apposition. A singular condition of bone revealed itself during the operation—namely, that the periosteum on the upper fragment was loose, and could be slipped up of the bone as a man might turn up his shirt-sleeves. This tissue was carefully replaced, yet, on account of this condition of bone, he (Mr. Barwell) could not but look to the issue of the case with some anxiety. The man had had as yet (ten days afterwards) no bad symptom.

Mr. C. H. Moore thought the plan suggested would be valuable in some cases; but there would be some risk to life by tetanus and pyæmia.

Mr. Hilton said that, as a surgeon to a large hospital, he must add to the commendations of the other speakers his opinion that the paper was one of great interest, and that the plan was likely to be very useful when ordinary treatment had failed. He (Mr. Hilton) understood Mr. Holmes Coote to say that when there was fatty degeneration of the bone the ends never would or could unite; yet the author had related a case of cure by his plan, although at the operation the bone was so soft that a knife was passed through it.—*London Lancet.*

ON DREAMING AND SOMNAMBULISM IN RELATION TO THE FUNCTIONS OF CERTAIN NERVE-CENTRES.

By W. S. SAVORY, ESQ., F. R. S.

In the first portion of the discourse a sketch was given of the general plan of construction of the nervous system, from the simplest to the more complex forms. Then the different kinds of reflex action were alluded to, and the several centres indicated which, with greater or less certainty, are known to be concerned in their production. Thus the simplest and most universal form of reflex action, called excito-motor, being not necessarily attended by sensation or consciousness, was referred to the spinal cord and medulla oblongata. Sensori-motor actions, those which involve sensation or consciousness, but which do not necessarily arouse ideas, were referred to certain ganglia beyond, such as the optic thalami—the corpora striata being, perhaps, concerned in motion—and the olfactory, optic, auditory, and gustatory ganglia; these, in all probability, collectively constituting what is called the sensorium, each kind of sensation being produced through its own proper ganglion. Lastly, those acts which involve ideas, and which are therefore called ideo-motor, were referred to the cerebrum.

The production of what are called subjective sensations was accounted for by the fact, that if an impression be made on any part of a sensitive nerve, even if in the centre to which it passes, the sensorium perceiving that impression, refers it, not to the part of the nerve which is impressed, but to its periphery, to the part to which the filaments are distributed.

Then sleep was described as a state of rest of the sensorium and cerebral lobes. Its leading phenomena are the result of the suspension of their functions—the suspension of consciousness and of the mental faculties generally. Sleep is to the brain what rest is to every organ of the body.

Of dreaming it was said: When sleep is partial or imperfect the functions of those ganglia whose rest is sleep will not be entirely suspended. They will remain, in some measure, active. Impressions will still be recognised by the cerebral hemispheres, and will give rise to ideas. Thus dreams are produced. Dreams, therefore, are the result of imperfect exercise of the hemispheres when in a state of partial repose. There may be total abstinence of consciousness of external things, and yet withal a state of mental activity varying greatly in degree and

duration. Dreams, then, occur when sleep is not profound.—They cannot arise during complete repose.

There is no sufficient reason to deny the existence of a period of complete unconsciousness—of complete suspension of the mental faculties. Doubtless the brain, like other organs, is at times in absolute repose. While dreaming, sleep must be considered imperfect.

Again, if the general view here expressed be the correct one, that dreaming is the natural condition of imperfect repose, there is no good reason for denying the supervension of dreams at any period of sleep.

There can be little doubt that dreams are very transient, but the evidence of the extreme rapidity which has been assigned to all of them is defective. Of course the duration of dreams bears no comparison to that of the events and circumstances which they picture. But looking at the relation of dreaming to somnambulism, their frequent occurrence, the period occupied by day-dreams, and the time that disturbed sleep and other indications of dreaming will sometimes last, it is, perhaps, more reasonable to conclude that some dreams are not so instantaneous as many imagine.

It is highly probable that all animals with cerebral hemispheres dream. This conclusion, which naturally follows on the view here taken of the nature of dreams, is confirmed by observation.

When impressions reach the cerebral hemispheres they arouse ideas. Impressions may be objective, arising from without, what we call real; or subjective, arising from within, what we call fancies. The exciting cause of dreams, then, may come from without or from within.

As the chief feature of sleep is a state of unconsciousness, so, in general, the remarkable feature of dreaming appears to be an absence of the power of the will over the current of thought and over action. Thus ideas are aroused in rapid succession without guidance or correction, but no volitional acts are accomplished. Hence the frequent incoherence and inconsistency of dreams. Of course there are all degrees of this. Dreams may be and, often are, consistent and rational, whether from the more complete exercise of the cerebral lobes, or from the nature of the impressions which excite them; but oftentimes they are characterized by a strange want of regulation and co-ordination of the ideas which represent them. When, therefore, we dream what we call nonsense, it is because there is a partial or complete absence of voluntary control over the current of thought,

and because we cannot compare our conceptions and ideas with surrounding objects and circumstances, and thus correct them.

The extent to which the ideas that constitute dreams are coherent, depends probably, in great measure, upon whether they are habitual or strange to the waking state. When the will is not alert, old ideas are more apt to be orderly than new ones, for the former may fall into their accustomed sequence, whereas the latter have not even habit to arrange them. Every one knows, for instance, how an idea excited by an impression may forthwith arouse a train of others which have been before associated with it. Thus, for the most part, dreams are rational in proportion as they arise out of existing circumstances.

In comparing, then, the condition of the mind in dreaming with its active state while awake, we are led to notice these distinguished features:—

The will is in abeyance. It ceases to control, or rather to direct, the current of thought.

The correcting influence of external impressions is suspended.

Impressions conveyed to the brain when awake excite ideas, which are, for the most part, in a healthy mind, subjected to the regulating influence of the will; and if they give rise to acts these are voluntary and rational. But when the influence of the will is suspended, and it ceases to direct the current of thought, the acts which such ideas thus produced may at once excite are often strikingly irrational or altogether absurd.—Such examples may be seen in persons intoxicated by alcohol, or laughing gas.

As in these cases, so, in the same way, it is doubtless possible sometimes to lead the ideas during sleep, when not profound, by by means of external impressions, and even to determine their nature. Thus gloomy ideas may be suggested by a dull tone of the voice, while cheerful ones may be aroused by lively sounds. In the same way the ideas may be adapted to certain conditions in which a person may be placed. Every work on the subject contains some illustrations of this. And just as a dream may be started by an external impression, so an impression made upon any of the senses during a dream will oftentimes fall into the current of ideas then flowing through the mind. Thus a noise may become the report of firearms, or the shout of a multitude, or a peal of bells, or something else, according to the subject of the dream.

The nature of dreams, in their relation to the absence of the correcting influence of surrounding circumstances, is well illustrated by the effect of darkness and silence on delirium. The

phantoms which then arise, the correcting influence of external circumstances being shut out, will often at once disappear in the presence of light or at the sound of a well-known voice.

There is a peculiar condition of the mind often occurring in some persons which is well expressed by the term day-dreaming. In this state the ideas are allowed to flow on without control. They are not restrained by any effort of the will. In the worst form they are not even co-ordinated. One idea suggests another, and so on until the thoughts have wandered far away from the original subject. Nothing is seen but the vision of fancy. The most improbable, nay impossible, prospects are conjured up and contemplated either as present or future realities, and no attempt is made to check or control the most extravagant or erroneous conclusions. Here, however, at least at the outset, there is an indisposition rather than an inability to reason. When in this state a person is said to build castles in the air. The mind is wholly withdrawn from the consideration of external and surrounding circumstances, and revels in the luxuriance of its thoughts. This is really a dreaming state, although, owing to the activity of the sensorium, day-dreams are more readily corrected by external circumstances.

Indeed, if we attend at all to the state of our mind, we must observe that it varies widely, and during a considerable portion of our waking hours, in many persons, especially the young, its condition is not far removed from day-dreaming. When we are not at work, when the attention is not fixed, during periods of leisure, the intellect is wont to escape insensibility from the control and direction of the will, and to wander far on into the regions of thought, one idea suggesting another, which forthwith takes its place. One step farther, and the influence of surrounding circumstances is almost shut out, and the imagination revels without restraint. Then we may be said to dream.

Day-dreaming, or reverie, and the dreams of sleep are connected by a peculiar phase of dreaming which sometimes occurs when the sleep is unusually light, or more often when we are awakening out of sleep. In this state the sensorium is more or less active. We are conscious. It is characterized, moreover, by a partial and imperfect control over the current of thought, and a voluntary effort, in some degree successful, is made to prolong agreeable ideas and to dispel gloomy ones. This condition must be familiar to every one as occurring at the dawn of day before rising.

Again, every one knows that a dream out of which we have awakened is very liable to occur if we fall asleep again. Such

cases tend to establish the relation between our sleeping and waking thoughts. By watching and analyzing the phenomena we can observe how insensibly they pass into each other, the vision of our sleep, rising into ascendancy as the influence of external impressions and of the will is withdrawn.

Of somnambulism. Now just as dreams may be regarded as due to partial activity of the cerebral lobes, when in a state of imperfect repose, so may the condition termed somnambulism be regarded as essentially the result of a state of more or less complete activity of the sensorium, the hemispheres beyond being nevertheless at rest.

In what may be called the purest form of somnambulism various acts may be accomplished in the most perfect manner, as the direct result of impressions, without any evidence of the intervention of ideas. But although in somnambulism impressions do not necessarily arouse ideas, yet they nevertheless produce sensations and determine sensori-motor acts. That they react on the sensorium, and are not merely excito-motor in their nature, is evident from their results. Sounds are sometimes heard, and objects recognized by the sight and touch.

The term somnambulism appears to be very loosely employed. In its common acceptation a combination of dreaming and somnambulism is implied. Perhaps, indeed, this is the most common form of somnambulism. Not only is the sensorium active, but the hemispheres themselves are partially awake. But although the description usually given of somnambulism would imply an active state of the cerebral hemispheres as well as of the sensorium, would include a state which is essentially that of dreaming —so that somnambulism is described as an "acted dream"— yet, while admitting that this more complicated condition may be a common one, it is in the highest degree important to recognize the fact, that a state may occur in which some or all of the sensorial centres are active, the cerebrum itself being nevertheless in a state of complete repose; the actions which result being simply sensori-motor or instinctive ones. Thus no ideas are aroused, and nothing is remembered. This may be described as the simplest and purest form of somnambulism.

It seems, then, that the clearest and most correct idea will be obtained of the two states, and of their relation to each other, by regarding them as manifestations of various degrees of activity of those centres which in profound sleep pass into a state of complete repose; that either alone may be active, while the other is at rest, or both together in imperfect sleep may exhibit all degrees of partial activity, in various proportion, short of

that thorough and complete exercise of their functions when wide awake.

It appears that this view will afford an insight into certain facts which do not otherwise admit of explanation.

Dreaming is more frequent than somnambulism, because of all portions of the nervous system the cerebral lobes are the most sensitive to variations in the quantity and quality of blood circulating through them. Witness the effects of alcohol, ether, and chloroform.

Somnambulism is more common in the young, because then the sensorial centres are more prone to activity. With regard to dreams the rule is less general, being influenced by habits of mental exercise.

The remembrance of dreams, not of somnambulistic acts. It is important to note the absence of memory in somnambulism. It appears that acts purely somnambulistic are never remembered or recalled. This seems to point to their nature. They find their parallel in instinctive actions.

The dexterity and accuracy of somnambulistic act; for example, of muscular movements in walking. Perhaps in this case the cerebellum is awake also.

The somnambulist walks across a narrow plank over a frightful chasm steadily and without fear. Why? Because the act is a sensori-motor one, and no idea is called into play. For the same reason, a person wide awake may accomplish the same feat in the same manner if the danger be concealed from him—if he have no idea of it. In the former case, he may see it, but has no idea of it; in the latter, he has no idea of it because he cannot see it.

In this view of the matter, therefore, the actions of the somnambulist are essentially of the nature of instinctive ones. A careful annalysis of them show that they possess this character. In the simplest and purest form of somnambulism, as in the simplest and purest examples of instinctive acts, there is not any satisfactory evidence of the operation of the intellectual powers. In either case is seen the adaptation of means to ends; but there is no evidence of the intervention of ideas, of the calculation of consequences, of reason. This difference, however, must be noted in the two cases: The operations of instinct are invariably associated with an active and acute state of the senses. In somnambulism all the senses are not commonly in full activity.

Summarily, then, these several states may be thus contrasted:—

In profound sleep there are no acts beyond excito-motor ones, and even these are reduced.

In somnambulism there are, beyond these, sensori-motor acts.

In dreaming ideas are aroused.

Dreaming, or a combination of the two, must be distinguished from purely somnambulistic acts. Perhaps in the most common form of somnambulism dreaming is, to a greater or less extent, combined with it. Thus somnambulism is presented under various forms, according to the absolute and relative degree of activity of the different senses and the condition of the cerebral lobes. All forms occur, from merely turning in sleep, to walking, talking, writing, and so forth.

And as in somnambulism some degree of activity of the cerebral lobes may be associated with an active state of the sensorium, so in dreaming some degree of activity of the sensorium may be combined with an active state of the cerebral lobes.

In those cases of so-called somnambulism in which acts are performed which involve a considerable exercise of the mental powers, the simple somnambulistic state must be combined with vivid dreaming. In this combination so many of the faculties are more or less active—so few, if any, completely at rest—that the individual is more awake than asleep.—*London Lancet.*

SPECIALTIES.

The question of specialties has nearly found its level in this country, and has been settled by admitting them in the bosom of the hospitals and centres of instruction, where they can serve purposes of progress and education within salutary limits and subject to the regulations of the general body. Left to themselves they grow rank and overrun the place in lawless outgrowths. In America, the professors of specialities have adopted the fashion of advertising. Thus we read that "Dr. Elsberg, Lecturer on the Laryngoscope and Diseases of the Larynx and Throat in the University of New York, devotes himself specially to the treatment of disease of the larynx and neighboring organs—office hours from four to six P.M.;" which announcement, with others similar to it, appears in large capitals, variously spaced, in the advertising columns of the principal weekly periodicals of America. Here there could not be any difference of opinion about the exceedingly gross impropriety of such a proceeding. However, various standards rule in different coun-

ries, and possibly the American profession may find as much reason to wonder at irregularities that we tolerate, as we do at the lax proceedings which their professional code admits.

The extent to which this system of open puffing has reached in the advertising columns of the jouraals, has led, however, to the following result. At a regular meeting of the New York County Medical Society, held on the 4th of January, 1864, the subjoined resolution was passed:—

"Resolved,—That in view of the unsettled state of opinion amongst medical practitioners concerning the propriety of advertising 'specialties' in medical and other journals, the delegates of this Society be instructed to bring this subject before the Medical Society of the State of New York at its next meeting, with the view to the establishment of some definite regulations concerning it."

In consequence of which a committee was appointed to prepare a report on the subject by the State Society, and the committee, which included the honored name of Dr. Brinsmade, on a subsequent day presented the following report and resolutions:—

"The undersigned appointed a special committee to report upon a resolution passed by the Medical Society of the County of New York in relation to the propriety of medical practitioners advertising their 'specialties' in medical or other journals, and referred to this Society for decision, beg leave to offer the following resolutions:—

"Resolved,—That in the opinion of this Society it is impossible to define the limits of advertising 'medical specialties,' either in medical or other journals.

"Resolved, — That advertisements indicating location and residence are the utmost limits of self-announcement consistent with professional dignity; and that all references to special branches of medical practice, as extra inducements to patronage, should be deemed violations of the code of medical ethics.

"Resolved,—That hereafter any medical practitioner so offending shall be deemed disqualified as a delegate to, or for membership of, this Society; and if already a delegate to or member thereof, shall be deemed a fit subject for discipline.

"Resolved,—That this Society recommends all medical societies in the State of New York to adopt the foregoing resolutions to establish the true dignity of our profession.

"Resolved,—That the foregoing resolutions be transmitted to the American Medical Association at its next annual meeting as an expression of the opinion of the medical societies of the

State of New York, and that for this purpose a Committee of presentation be appointed.

("Signed) Thomas C. Brinsmade,
Howard Townsand,
Guido Furman."

The report was accepted; and, on the motion of Dr. Jenkins, the subject was made the special order for the second day of the next annual meeting.

Thus the specialists receive a check; but the admission is made that advertisements indicating location and residence are consistent with professional dignity—a proposition which it seems to us very difficult to maintain, and which would assuredly be rejected with unanimity by any English Society. So far as they go, these resolutions are of good effect; but we could desire, in the common interests of professional dignity, that they should go further.—*London Lancet.*

Editorial.

RECORD OF PROCEEDINGS OF THE AMERICAN MEDICAL ASSOCIATION. FIFTEENTH ANNUAL MEETING. Held in Irving Hall, in the City of New York, Commencing June 7, 1864.

The following record has been compiled from the proof-sheets of the *New York Medical Independent*, kindly furnished us by the editors of that journal, and for which we return them our thanks.

FIRST DAY—MORNING SESSION.

At 11 o'clock, A. M., the Association was called to order by the President, Dr. Alden March, of Albany, N. Y., aided by Vice-Presidents James Couper, of Delaware, D. Prince, of Illinois, and C. C. Cox, of Vol. Med. Staff of U. S. Army.

The Secretaries, Drs. H. A. Johnson, of Illinois, and G. Furman, of New York, were also present and took their seats at the table.

Rev. Dr. DeWitt opened the exercises by a very appropriate and impressive prayer.

Dr. JAMES ANDERSON, Chairman of the Committee of Arrangements, then read the report of the committee, concerning the reception and registration of members and delegates, and in behalf of the committee cordially welcomed the members of the Association to the hospitalities of their brethren in the great Commercial Metropolis of the Union. He closed by suggesting that the Association should hold its meetings from 10 o'clock A.M., to 1½ o'clock P.M., and from 3 o'clock P.M., to such hour as they might choose to adjourn.

On motion, the recommendations of the report were adopted by the Association.

The junior Secretary, Dr. FURMAN, then read the roll of members. The President invited all the ex-Presidents present, together with Dr. Charles Tripler, Surgeon of the U.S. Army, to take seats on the platform.

On motion of Dr. BISSELL, of Utica, a recess of 10 minutes was taken, to enable the delegates from each State to select one of their number to act as a member of the Committee to nominate Officers and Committees for the ensuing year. At the close of the recess, the following were reported as the names of the Nominating Committee, viz.:—J. C. Weston, of Maine, J. N. Stiles, of Vermont, T. D. Marshall, of N.H., H. R. Storer, of Mass., J. Gardner, of R.I., B. H. Catlin, of Ct., J. P. White, of N.Y., L. A. Smith, of N.J., A. Nebinger, of Pa., F. E. B. Hintze, of Md., N. Young, of D.C., B. B. Leonard, of Ohio, J. F. Hibbard, of Ind., W. H. Byford, of Illinois, S. G. Armour, of Mich., A. E. McCurdy, of Iowa, George W. Phelps, of Mo., H. F. Askew, of Del., J. K. Bartlett, of Wis., Thomas Antisell, of U.S. Army, and Thomas L. Smith, of U.S. Navy.

The President, Dr. Alden March, then read his Annual Address.

He briefly reviewed the history of the Association, more especially in reference to its connection with the subject of Medical Education; paid a deserved tribute to his predecessors in the Presidential Chair; and urged a steady continuous effort to still further improve the educational interests of the whole profession.

The address was listened to with interest and pleasure, and an unanimous vote of thanks tendered to the author, with a request that a copy be furnished to the Committee of Publication.

The Association then adjourned until 3 o'clock P.M.

AFTERNOON SESSION.

At 3 o'clock P.M., the Association was called to order by the President, and the Secretary read the minutes of the morning session, which were approved.

Dr. Anderson, from the Committee of Arrangements, reported the names of additional delegates, and announced the following evening entertainments, viz.:—On Tuesday evening, at 8 o'clock, by Hon. C. Godfrey Gunther, Mayor of the City, and Drs. Joseph M. Smith, Charles A. Budd, Isaac E. Taylor, and Gurdon Buck; on Wednesday evening, by Drs. Willard Parker, James Anderson, Alonzo Clark, and Jared Linsley; and on Thursday evening, by Dr. E. R. Squibb, at his Laboratory in Brooklyn. Friday was set apart for an excursion from Bellvue Hospital to the Institutions on Randall's and Blackwell's Islands.

Dr. S. G. Armour, Chairman of the committee on nominations, presented the following report: For President, Dr. N. S. Davis, of Illinois; Vice Presidents, Drs. Wm. H. Mussey, of Ohio, Worthington Hooker, of Connecticut, Wm. Wheeler, of D.C., and F. E. B. Hinsey, of Maryland; Treasurer, Dr. Casper Wistar, of Pennsylvania; Secretary, Dr. G. Furman, of New York. The committee also recommended Boston as the next place of meeting.

Dr. Griscom, of New York, moved that the report be accepted and laid on the table, for the purpose of acting on an amendment to the Constitution relating to the term of office of the President and Vice-Presidents, which was proposed at the last annual meeting. After some discussion the motion of Dr. Griscom was lost.

Dr. Raphael, of New York, moved that the report be recommitted to the committee, with instructions to report the names of two or more candidates for the office of President, from which the Association should choose by ballot. This led

to a discussion in which Drs. Raphael, Currie, Corliss, Cohen, Bissell, Kennedy, Ramsey, and Jewell took part. But the motion to re-commit was lost. The question was then taken on the adoption of the report of the committee on nominations, and carried almost unanimously. The President appointed Drs. Bissell, of New York, and Askew, of Delaware, a committee to escort the newly elected officers to the chair.

The President elect, Dr. N. S. Davis, of Chicago, Illinois, on being conducted to the chair, expressed his gratitude for the honor conferred upon him—alluded to his identification with the Association, from the initiatory steps to its organization to the present time—declared his unabated attachment to the profession—and alluded regretfully to the continued absence of delegates from the South. The speech was brief, terse, conciliatory, and closed with no other allusion to the rebellion than the expression of an earnest hope, that we should soon again have the pleasure of greeting our Southern brethren at our annual re-unions, together with a full restoration to the glorious old union, of every foot of territory they represent.

Drs. A. B. Palmer, H. F. Askew, and S. G. Hubbard, were appointed by the chair a special committee to receive and examine all volunteer papers, designed to be presented to the Association.

On motion, the regular order of business was suspended for the purpose of acting on an amendment to the Constitution proposed at the last meeting, in relation to the appointment of a permanent secretary.

The proposed amendments, providing for the appointment of one *permanent* and one assistent Secretary, and defining their duties, having been fully stated by the chair, and discussed by Drs. Wistar, Gardner, Hooker, Kennedy, Mauran, Loomis, Bond, and Jewell, they were unanimously adopted.

The Association than adjourned until 10 o'clock A. M.

SECOND DAY—MORNING SESSION.

At 10 o'clock A. M., the Association was called to order, the President, Dr. N. S. Davis, being in the chair. The minutes

of the preceding meeting were read by Secretary Furman, and approved. Several gentlemen were elected members by invitation. Dr. Brown-Séquard, of Boston, and Dr. John P. Gray, of the Lunatic Asylum, at Utica, were elected permanent members. The former, on being invited to take a seat on the platform, made a brief and modest acknowledgement of the honor conferred upon him. The regular order of business being the reports of officers and standing committees, the whole list was called in order, and the several reports referred to the appropriate sections for consideration.

Resolutions concerning the relative rank and pay of army Surgeons, were offered by Dr. C. C. Cox, and after some discussion by Drs. Cox, Hamilton, of N. Y., and Mussey, of Cincinnatti, they were adopted.

On motion, a vote of thanks was unanimously tendered to Dr. Alden March, the retiring President of the Association. At 1½ o'clock P. M., the Association adjourned, to meet in sections in the afternoon.

At 3 o'clock P. M., the sections on Chemistry, and Materia Medica; Practical Medicine and Obstetrics; Surgery; and on Meteorology, Medical Topography, Epidemic Diseases, &c., were organized, and proceeded to the hearing and discussion of the several reports and papers referred to them.

THIRD DAY—MORNING SESSION.

The Convention re-assembled this morning, Dr. N. S. Davis, of Chicago, in the Chair, and Dr. Guido Furman, of N. York, Secretary.

After reading the minutes, Dr. Childs, of Mass., on invitation, took a seat on the platform, and thanked the Association for the honor extended to him.

Dr. Mauran, of R. I., called the attention of the Convention to the prizes offered by the Rhode Island State Medical Society, amounting to $200, for the best essay on the following subjects:

1. What evidence is there that Inflammatory and Febrile Diseases have undergone any general change of type?

2. The effects of climate in America on Tuberculous Diseases.

On motion of Dr. Cox, Dr. Charles S. Tripler, U. S. A., was made Chairman of the Committee on memorializing Congress for better assimilation of rank and pay among army surgeons.

A letter was received from Dr. R. Hills, of the Central Ohio Lunatic Asylum, Chairman of Committee on Insanity, in which he requests a continuance of the Committee, the report not being completed. The request was granted, and on motion of Dr. J. H. Griscom, of N. Y., Dr. E. H. Van Duzen, of Mich., was added to the committee.

Dr. Butler, of Phila., Secretary of the Section on Meteorology, Medical Topography, Epidemic Diseases, and Medical Jurisprudence and Hygiene, reported a series of resolutions on compulsory vaccination, favoring the enactment of laws in the different States to this purpose.

The same Section reported back for publication the communication of Dr. Griscom of this city, on "Physiological and Dietetic relations of Phosphorus;" also the paper presented by Dr. Cyrus Ramsey, on Sanitary Science and Mortuary Statistics of New York, from 1850 to 1864.

Dr. E. R. Squibb, of this city, from Committee on the Practical Workings of the U. S. Law relating to the Inspection of Drugs and Medicines, presented a report. The report goes back to the origin of the Drug Law in 1848, and the workings of it since. The fixing of the standard was liberal, so as not to impede the drug trade. So, for instance, was Jalap admitted with 11 per cent. Jalap Resin, while good Jalap contained 12 to 14 per cent. resinous matter, and Scammony with 73 per cent.; Scammony, white and good article always contains 75 per cent. Political influence, however, had debased the execution of the law, so as to make it a dead letter on the statute-book. Inferior Cinchona bark, Jalap with resin extracted, Senna is rarely met with in a pure state, and is generally found much adulterated with sticks and stones. The whole mal-administration of the law is the result of bad appointments by the Secretary of the Treasury. So, for instance, had Mr. Chase made the appointment of Examiners in direct opposition to the requests of the State Medical Societies, aided by the Academy

of Medicine, College of Physicians, &c. These societies had suggested an examination of the applicants by the Medical Boards of the Army and Navy, and that they be graduates of the Medical Colleges. The same request was made by the leading drug houses in the country. All the principal ports of entry were represented in the movement. The Committee who presented the petitions were promised that they would be heard, and their report receive attention. But they were ignored, and men appointed totally unfit for the position, for at no time, were there so many spurious and bad drugs in the market as within the last year or two. The parties to be blamed for this were first, the Secretary of the Treasury, and next the incumbents of the office, who break their oath of office frequently. The report recommends some action on this state of affairs, as soon the time would come when new appointments would be made.

Dr. Percy moved that the report be laid on the table, as it assailed the officers of the Government, but it was lost by a vote of the whole house but two.

After discussion by Drs. Percy, Squibb, Loomis, Jewell, Currie, and McFarland, the paper of Dr. Squibb was referred to the Section on Chemistry and Materia Medica.

The Secretary of the Section on Practical Medicine, Dr. Storer, of Boston, reported that the paper of Dr. Gardner, of N. Y., on the use and abuse of Pessaries, had been referred to the Committee on Publication, as was also the paper presented by Dr. Leving, of Pa., on Spotted Fever. Dr. Storer also read a paper on the "Relations of Female Patients to Hospitals for the Insane; the necessity, on their account, of a Board of Consulting Physicians to every hospital;" which was also referred to the Committee on Publication, and referred resolutions carrying out this view to the full Association for confirmation.

The resolutions of Dr. Storer read as follows:

Resolved, That in the opinion of the American Medical Association, it is expedient that there should be attached to every public hospital for the insane, one or more consulting physicians [whose appointment should be honorary], who may be consulted at the discretion of the Superintendent; such measure being for

the interest of the hospital, its medical officers, and its patients.

Resolved, That a copy of the above resolution be transmitted to the Board of Trustees of each of our public hospitals for the insane, and also to the Secretary of the Association of American Superintendents, with the request that it may be endorsed by that body, and the act proposed to be urged upon the respective boards with which the members are officially connected.

These resolutions were discussed by Drs. Griscom, Storer, Gardner, McArthur, and Bronson. On motion of Dr. Griscom the words inclosed in brackets in the first resolution were stricken out, and as thus amended the resolutions were adopted.

Dr. Griscom spoke at some length on the appointment of a Permanent Secretary, as requiring a person of eminent qualifications. He offered a resolution to the effect that the Secretary be entitled to a compensation from the surplus funds of the Society, after all claims for each current year shall have been paid.

Dr. Kennedy, of New York, moved that the salary be fixed at $1,500, which was amended by Dr. Sayre, by making it $5,000.

Dr. Raphael, of New York, was opposed to the salary, as experience here taught that no such sums were ever left over.

The Chair called the attention of the meeting to the clause in the Constitution fixing the compensation of the Secretary to his expenses in attending the Convention, and for maintaining the correspondence. He therefore should rule the question out of order.

Dr. Griscom appealed from the decision of the Chair, which appeal he afterwards withdrew.

Dr. Kennedy moved a reconsideration of the resolution adopted yesterday on the Constitution.

Dr. L. A. Sayre moved that the members tax themselves sufficiently to pay a salary of $1,500 to the Secretary.

Dr. Palmer, of Michigan, advised to lay further discussion over. The matter dropped here.

The Committee on Nominations, Dr. Armour, of Michigan, reported the following Standing Committees:

On Insanity.—Ralph Hills, Ohio; C. H. Nichols, Dist. of Col.; D. P. Bissell, N. Y.; S. W. Butler, Pa.; John S. Butler, Ct.; E. R. Van Duzen, Mich.

On Exsection and its Connection with Conservative Surgery.—Lewis A. Sayre, N. Y.; G. W. Norris, Pa.; G. C. Blackman, Ohio; H. S. Tewksberry, Me.; E. Andrews, Ill.; G. B. Twitchell, N. H.; G. C. Hughes, Iowa; Geo. Clymer, U. S. N.; J. R. W. Dunbar, Md.; R. H. Gilbert, U. S. A.

On Alcohol and its Relation to Man.—G. E. Morgan, Md.

On Microscopic Observations on Cancer Cells.—L. J. Sanford, Ct.

On Medical Ethics.—J. J. Murphy, Ohio; M. L. Linton, Mo.; B. F. Schneck, Pa.; S. Wickersham, Ill.; A. J. Fuller, Me.

On the Microscope.—J. M. Corse, Pa.

On Quarantine.—D. D. Clark, Pa.; E. M. Snow, R. I.; W. Jewell, Pa.; E. D. Fenner, La.; J. W. Houck, Md.

On Causes of the Extinction of the Aboriginal Races of America.—G. Suckley, N. Y.

On the Relations which Electricity sustains to the Cause of Disease.—S. Littell, Pa.

On the Morbid and Therapeutic Effect of Mental and Moral Influences.—A. B. Palmer, Mich.

On the Causes and Treatment of Ununited Fractures.—F. H. Hamilton, N. Y.

On Diphtheria.—L. Clark, Ill.

On the Drainage and Sewerage of large Cities, and their Influences on Public Health.—W. J. C. Duhamil, Dist. of Col.; E. C. Baldwin, Md.; C. Ramsey, N. Y.

On the Uses and Abuses of Pessaries.—J. P. White, N. Y.

On International Medical Ethics, to Investigate the Conditions demanded for a Diploma of Doctor of Medicine in the various Medical Schools and Universities of Europe.—J. B. Upham, Mass.; R. Thompson, Ohio; G. C. Shattuck, Mass.; G. C. E. Weber, Ohio.

On Climatology and Epidemic Diseases.—C. W. Parsons, R. I.; P. A. Stackpole, N. H.; T. M. Logan, Cal.; R. C. Hamill, Ill.; J. C. Weston, Me.; B. H. Catlin, Ct.; C. S. Allen,

Vt.; T. Antisell, Dist. of Col.; J. W. H. Baker, Iowa; A. Sager, Mich.; O. S. Mahon, Md.; J. W. Russell, Ohio; D. F. Condie, Pa.; H. Townsend, N. Y.

On Autopsies in relation to Medical Jurisprudence.—F. C. Finnell.

On so-called Spotted Fever.—J. J. Levick.

On the Introduction of Disease by Commerce, and the means for its Prevention.—A. N. Bell, Brooklyn.

On Patent Rights and Medicine Men.—D. Prince, Ill.; T. Antisell, Dist. of Col.; S. Smith, N. Y.

Dr. W. B. Atkinson, of Philadelphia, was proposed for Permanent-Secretary of the Association, and Dr. Storer, of Boston, for Assistant-Secretary.

Dr. Kennedy moved the substitution of the name of Dr. Furman as Secretary, paying a high eulogium to the character of Dr. Furman.

Dr. Gardner was opposed to the nomination of a gentleman from Philadelphia, Pennsylvania having all the patronage from the Society by having the Board of Publication, the Treasurer, etc. He would move that the nomination be sent back to the Committee.

Dr. Nebinger, of Pa. defended the Committee from the charge of having favored a particular State.

The nomination of Dr. Furman was lost by a vote of 56 for 75 against, whereupon Dr. W. B. Atkinson was elected unanimously.

The Committee on Prize Essays, through Dr. Peaselee, of N. Y., reported that they had received three Essays for competition, viz: On the surgical treatment of morbid growths in the Larynx, which was received too late to be acted upon. This essay was written with excellent care, and showed great research on the subject.

What effect has the milk and meat of diseased animals on public health? The Committee gave this a high eulogium and expressed a hope for its publication.

The third essay "Pathology of Jaundice," was given the prize. Dr. J. Fleet Spier, of Brooklyn, N. Y., being the author.

The meeting then adjourned to 4 o'clock P. M.

AFTERNOON SESSION.

At 4½ o'clock P.M., the Association was called to order, the President, Dr. Davis, in the Chair, and Dr. Furman, Secretary.

Resolutions complimenting the Committee of Arrangements, Secretary Furman, the officers of the various Institutions, and the Profession of the city, were unanimously adopted.

Dr. A. B. Palmer, also offered resolutions recognizing the services, patriotism, and sacrifices of the Medical Officers of the Army and Navy, which were adopted with unanimity and enthusiasm.

Dr. L. A. Sayre, of N. Y., moved that a Committee consisting of Drs. N. S. Davis, of Chicago, Samuel Willard, of Albany, and J. F. Hibberd, of Richmond, Ind., be appointed to revise the Constitution, Bye-Laws, and Ordinances of the Association, for the purpose of harmonizing the several provisions without introducing any new matter. The motion was adopted.

Resolutions concerning the death of Dr. B. F. Bache, of Philadelphia, were referred to the Standing Committee on Necrology.

The Secretary of the Section on Chemistry and Materia Medica, reported that the several papers referred to it, had been considered, and their reference to the Committee of Publication recommended. The report was adopted.

The Secretary of the Section on Meteorology, Epidemic Diseases, &c., &c., reported in reference to the several reports and papers referred to it, which report was adopted.

The Secretary of the Section on Surgery, reported that the several papers and cases referred to it, had been examined and discussed with much interest. The report was adopted.

The Secretary of the Section on Practical Medicine and Obstetrics, reported that the number of reports and papers referred to it, was such as to require further time to complete their consideration. Leave was given the Section to hold an evening session, and make a final report directly to the Secretary of the Association.

Dr. J. Homberger, of N. Y., offered the following:

Whereas, The position of Specialists and Specialties is but very ill-defined, be it

Resolved, That the American Medical Association go into a Committee of the Whole, in order to define the position of Specialism and Specialists, as well as the duties of the profession towards Specialists, and the duties of Specialists.

After some discussion the resolution was referred to a special Committee, consisting of Drs. J. Homberger, of N. Y., H. R. Storer, of Boston, W. Jewell, of Philadelphia, W. Hooker, of New Haven, and J. Brinsmade, of Troy; with instructions to report at the next annual meeting of the Association.

On motion of Dr. McGugin, of Iowa, a resolution was adopted recommending the passage of Laws providing adequate compensation to medical witnesses in courts of justice.

The amendment to the Constitution proposed at the last annual meeting, providing that the President and Vice-Presidents elected at one annual meeting, do not enter upon the discharge of their duties, until the commencement of the next, was called up, discussed, and adopted unanimously.

A resolution *protesting against* the appropriation, by Congress, of any reward to Dr. Morton for his pretended discovery of Anesthetics, was adopted by a very large majority.

A vote of thanks to Dr. N. S. Davis, for the able manner in which he presided over the meetings of the Association, was adopted unanimously.

On motion, the Association adjourned to meet in Boston, Mass., on the first Tuesday in June, 1865.

Remarks.—Thus ended one of the largest, most harmonious, and profitable meetings of the American Medical Association. The business was all conducted in good order; the reports and papers presented were numerous and valuable; the discussions in the several Sections animated and profitable; and the evening entertainments all that liberal hospitality and high intellectual culture could make them. The whole of Friday was devoted to an excursion from Bellevue Hospital to the Institutions on Randall's and Blackwell's Islands. The day was very

pleasant; the arrangements, under the admirable leadership of Dr. Taylor, excellent; and the large company in attendance reaped a rich harvest of enjoyment.

On Saturday, a large number accepted the very kind invitation of the Medical Director, and visited the Military Hospitals on David's Island, but previous engagements prevented us from enjoying their company.

SEMI-ANNUAL MEETING OF THE ESCULAPIAN SOCIETY

Kansas, Ill., May 30, 1864.

Prof. N. S. Davis.

The Semi-annual Meeting of the Esculapian Society was held at Kansas, Ill., Wednesday, 25th inst., Dr. J. M. Steele was chosen President, and George Ringland, Secretary *pro. tem.*

A highly interesting interchange of opinion on subjects of practical interest in Medicine, Surgery, and Obstetrics, served to make the occasion pleasant and profitable to the members present.

So many of the most active members of the Society being absent in the army, it is with some difficulty that its vitality can be maintained, but a strong determination was manifested at this meeting to keep it alive till "this cruel war is over;" when we anticipate a glorious re-union of all the surviving members. I was absent a part of the time, so that I am unable to give you a synopsis of the discussions.

The Annual Meeting is to be held at Paris, on the last Wednesday in October, next.

Yours, most Respectfully,
GEORGE RINGLAND,
Secretary *pro. tem.*

Dr. Langer, of Davenport, on Sub-Cutaneous Medication.—We cheerfully bear testimony to the correctness of the statements of Dr. Langer, on the above subject, as given in another part of this number of the Examiner.

Book Received.—The following work has been received, but too late for extended notice in this number. It shall be examined in future:—

A Treatise on Chronic Inflammation and Displacements of the Unimpregnated Uterus.

By W. H. Byford, A.M., M.D., Professor of Obstetrics, &c., Chicago Medical College, Med. Dept. Lind University.

Philadelphia: Lindsay & Blakiston. 1864.

Foreign Intelligence.—Prof. Langenbeck, Surgeon-General of the Prussian Army, has been allowed to visit the wounded German prisoners in Copenhagen by the Danish Government and to return.

Rudolph Wagner, the celebrated physiologist, whose death took place in May, was appointed Professor of Zoölogy at Erlangen in 1833, but was called to Göttingen in 1840. His reputation was in a great measure made by the publication of his "Handwörterbuch der Physiologie," which, however, was only partly his own work.

The funeral of Prof. Oppolzer's wife was made the occasion of expressing the profound respect and love which is felt for this renouned teacher in Vienna. The heads of the University and all the students joined the procession, with funeral songs and torches, and the streets were thronged with sympathizing spectators.

Virchow, in the last number of his "Archiv," reports a case of trichinosis in Davenport, Iowa, as the first which has occurred in this country. The worms were discovered in the scirrhous breast of a woman after its removal, and a portion of the same was sent to him for examination. What is of chief interest in the case is the fact that the symptoms of trichina poisoning were noticed seven or eight years before the operation, and yet the worms were found alive.

Important data relating to the period of incubation of the poison of rabid dogs are given in the *Medizinische Jahrbucher*. The period was determined in 224 cases. In 40 cases less than one month; in 143 cases from one to three months; in 30 cases from three to six months; in 11 cases from six to twelve months.

The prize of 50,000 francs, offered by the Emperor Napoleon for the most useful application of electricity, has been awarded to M. Ruhenkorff for his induction coil.

Prof. Czermak, the eminent physiologist, has resigned his professorship at Pesth and returned to Prague, where he has founded a private physiological institution and laboratory, and is about to publish occasional "Mittheilungen."—*Boston Med. Journal.*

Medical News.—Mr. Edward Parish succeeds Prof. Thomas in the Chair of Materia Medica in the Phila. College of Pharmacy.——Dr. Dunlap, of Springfield, Ohio, employs permanganate of potash with great success in spotted fever, giving one-eighth to one-half a grain in solution, frequently repeated.—— The Surgeon of the Pirate Alabama was an Englishman, and his fellow students propose to erect a tablet to his memory.—— The guillotine is named from Dr. Guillotin, who proposed the law requiring that all criminals condemned to death "should be beheaded by means of a simple machine;" he did not invent the machine, as has been alleged.——Dr. Carnochan has amputated at the hip-joint five times.——Prof. Gross has in preparation a third edition of his System of Surgery, and Prof. Stille a second edition of his work on Materia Medica.——Prof. Miller, of Edinburgh, is said to have been killed by a review of his "System of Surgery." The *Times and Gaz.* says: "He was a tetotaller, and consequently did not give his brain that rest and refreshment, that power of discarding and wiping out irritating and exciting trains of thought, which wine, temperately used, will confer. Had he taken a little wine, and excited himself less, he would have written a better book, and might have laughed at reviewers."——Dr. Roberts Bartholow has resigned his commission of Assistant-Surgeon U. S. Army, and entered into private practice at Cincinnati, Ohio; his address is 344 Race Street. Dr. B. also proposes to engage in private instruction of medical students, or young men desiring to enter the army or navy.——Prof. Weber, of Cleveland, Ohio, is the President elect of the Ohio State Medical Society.—*Am. Medical Times.*

The Cinchona Plant in Jamaica.—In the autum of 1860, a quantity of the seeds of several species of the Cinchona were received at Jamaica. By the month of October following, about 400 healthy plants were raised, but owing to the low level at which they were planted, more than half perished. They were then removed to an elevation of about 4000 feet above sea level, with the best results. In twelve months a plant of the red bark (Cinchona succirubra) had attained the height of 44 inches,

with leaves measuring $13\frac{1}{2}$ inches in length by $8\frac{3}{4}$ inches in breadth. The culture of the Cinchona micrantha (grey bark) has not been so successful; the leaves are, however, much larger. There is abundance of land in the island possessing all the conditions requisite for the growth of the plant.

THE MECHANICAL TREATMENT
OF
ANGULAR CURVATURE,
Or, POTT'S DISEASE OF THE SPINE.

By CHARLES FAYETTE TAYLOR, M.D., of New York.

THIS new method of Treatment, first brought before the Profession through the Transactions of the Medical Society of the State of New York, and attended with such marked success, is here offered in pamphlet form, convenient for transmission through the post. PRICE 35 CENTS.

BAILLIERE BROS., 520 BROADWAY, NEW YORK.

BELLEVUE HOSPITAL MEDICAL COLLEGE.
City of New York.
SESSION FOR 1864-65.

THE Trustees and Faculty announce with much gratification the renewed evidence of success afforded by the Session of 1863-4. The experience of three Sessions has furnished ample proof of the importance of the new movement in behalf of medical education inaugurated by this College.

FACULTY.

ISAAC E. TAYLOR, M.D., *President.*
AUSTIN FLINT, Jr., M.D., *Secretary.*

James R. Wood, M.D., Professor of Operative Surgery and Surgical Pathology.
Frank H. Hamilton, M.D., Professor of Military Surgery, Fractures and Dislocations.
Lewis A. Sayre, M.D., Professor of Orthopedic Surgery.
Alexander B. Mott, M.D., Professor of Surgical Anatomy.
Stephen Smith, M.D., Professor of Principles of Surgery.
Isaac E. Taylor, M.D., George T. Elliot, M.D., B. Fordyce Barker, M.D., } Professors of Obstetrics and the Diseases of Women and Children.
Benjamin W. McCready, M.D., Professor of Materia Medica & Therapeutics.
Timothy Childs, M.D., Professor of Descriptive and Comparative Anatomy.
Austin Flint, M.D., Professor of the Principles and Practice of Medicine.
R. Ogden Doremus, M.D., Professor of Chemistry and Toxicology.
Austin Flint, Jr., M.D., Professor of Physiology and Microscopical Anatomy.
Henry D. Noyes, M.D., Demonstrator of Anatomy.
George H. Humphreys, M.D., Assistant Demonstrator of Anatomy.
N. R. Moseley, M.D., Prosector to Chair of Surgical Anatomy.
A. W. Wilkinson, M.D., Assistant to Chair of Chemistry and Toxicology.

PRELIMINARY TERM.

The Preliminary Term will commence on Wednesday, Sept. 14, 1864, and continue to the beginning of the Regular Term, viz.: for four weeks.

Instruction during this Term will consist of didactic courses on special sub-

jects of interest and practical importance, together with daily clinical lectures. The College lectures during this Term are given exclusively by Members of the Faculty. Attendance during this Term is not required, but students are earnestly solicited to attend: it being designed to make this Term not merely a nominal, but an actual extension of the period of instruction.

REGULAR TERM.

The Regular Term will commence on Wednesday, Oct. 12, 1864, and end early in March, 1865.

During the whole of the Session the student will have the opportunity of attending at least two clinical hospital lectures daily. In addition to these, four didactic lectures are given on every week-day except Saturday, in the College building within the Hospital grounds. The didactic lectures are so arranged as not to interfere with hospital attendance. Ample time is allowod for accompanying the visiting Physicians, Surgeons, and Obstetricians of the Hospital, attending clinical lectures, witnessing Surgical and Obstetrical operations, autopsies, &c., without compromising any of the courses of didactic instruction, the latter being as complete in this Institution as in colleges not connected with hospitals. Clinical and demonstrative teaching constituting the great feature of this College, the arrangements are such as to render the immense resources of the Hospitals available to the fullest extent.

All the lectures in this College are given either in the Hospital or in the College building within the Hospital grounds.

The Bellevue Hospital receives annually from ten to twelve thousand patients. The annual number of births in the Hospital is about five hundred. The Blackwell's Island Hospital contains usually about one thousand patients, a large proportion being affected with chronic diseases. This Hospital contains always several hundred cases of syphilis. In addition to the vast field of clinical instruction afforded by these Hospitals, the student may avail himself of the other Institutions under the government of the Commissioners of Public Charities and Correction, together with the varied resources for practical instruction contained in the great Metropolis.

The facilities for the study of practical Anatomy are unlimited. Anatomical material is supplied free of expense.

The fees for tickets to all the lectures, during the Preliminary and Regular Terms, amount to $105; tickets for one or any number of the seven departments of instruction may be taken out separately. The Matriculation fee is $5. The Demonstrator's ticket is $5. Graduation fee is $30. No other fees are required. The Hospital ticket is gratuitous, after Matriculation. Students who have attended two full courses in other accredited* schools, receive all the tickets for $50, exclusive of the Matriculation fee. Students who have attended two full courses in this College, or after one full course in this College, having previously attended a full course in some other accredited school, will be required to matriculate only. Graduates of other accredited schools, after three years, are required to matriculate only; prior to three years, they receive a general ticket for $50.

Payment of fees is required in all cases, and tickets must be taken out at the commencement of the Session. There are no exceptions to this rule.

Twenty-two resident Physicians and Surgeons are appointed annually, after an examination and recommendation by the Medical Board of the Hospital. They receive a salary sufficient for their support.

Students, on arriving in the city, are requested to report at once to Bellevue Hospital, situated on the East River, between 26th and 28th Streets, and inquire for the Janitor, Mr. Edwin A. Ware, who will take pains to aid them in securing comfortable accommodations, without delay.

For Circulars of the College, giving full information, &c., address the Secretary of the Faculty, Professor Austin Flint, Jr., 257 Fourth Av.

* Eclectic and Homœopathic schools are not accredited.

THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., EDITOR.

VOL. V. AUGUST, 1864. NO. 8.

Original Contributions.

ARTICLE XXXI.

REPORT OF COMMITTEE ON PRACTICAL MEDICINE.

BY N. S. DAVIS, M.D., Prof. of Practical and Clinical Medicine.

Presented to the Illinois State Medical Society, May, 1864.

(*Concluded.*)

Improvements.—Having devoted so large a space to the character of such epidemics as have prevailed in this State during the past year, the consideration of this branch of our report may be brief.

There are three principal modes by which Practical Medicine may be improved, viz:—

First, by a clearer knowledge of the indications to be fulfilled by treatment, afforded by more exact knowledge of etiology, pathology, and diagnosis.

Second, by new applications of remedies already more or less known to the profession.

Third, by the discovery and application of new remedial agents, and the determination of their value in the treatment of diseases.

It needs no comments to show that every addition to our knowledge of the causes capable of inducing morbid action, aids us in understanding the nature of the action thereby induced. Equally evident is the fact, that the more accurately

we can determine, not only, the location, extent, and nature of diseases, but also the stage of their advancement, the more exactly and successfully shall we be able to adjust the use of remedies in their treatment. It is by improvements in these respects, coupled with increased knowledge of the *modus operandi* of medicines, that we are enabled to establish the practice of medicine on a rational, instead of empirical basis. When the physician has so closely studied the symptoms, physiognomy, nature, and tendencies of diseases, that he is able to comprehend clearly the exact pathological condition of his patient, by a very simple process of reasoning, he determines what changes are necessary to arrest the morbid and re-establish the healthy actions of the affected tissues or organs. In other words, he sees clearly the indications it is desirable to fulfill, or the exact objects to be accomplished by treatment. With a corresponding knowledge of the properties and effects of remedial agents, he is even capable of promptly selecting such agent or combination of agents as will meet the indications in the individual case before him. He thus becomes not only a rational, but also, an independent practitioner. He is rational, because he prescribes medicinal agents to accomplish definite and clearly perceived purposes in retarding or arresting morbid action; and independent, because instead of relying on the particular formulæ of his books or teachers, he is at all times able to choose, from the materia medica, such agents and combinations as are adapted to each case as it is presented before him. Hence, if those who seek to improve Practical Medicine would cultivate more patiently and rigidly the departments of etiology, pathology, and diagnosis, more substantial advancement would be made, than in the search after new remedies. In regard to the first of these departments, we need much more extended and minute observations in regard to the hygrometrical, thermometrical, and electrical conditions of the atmosphere in connection with the prevalence of epidemic and endemic diseases. We need more extensive and careful observations in regard to the connection between the mental and physical habits of individuals and classes of individuals, and the diseases with which

they are most afflicted. To aid in all these investigations, we greatly need, also, a reliable registry of deaths throughout the whole State, based on the certificates of responsible physicians. In the department of pathology proper, the investigations have been active, and have made substantial progress in some directions.

The histology of morbid products, and the morbid conditions of the blood and secretions, have specially attracted the attention of the profession both in Europe and America. In June, 1863, Prof. E. ANDREWS, a member of this Society, presented to the meeting of the American Medical Association, in this city, a paper on "Diathesis, and their surgical relations," in which pathological views of much importance were set forth. The object of the writer was, to show that erysipelas, both idiopathic and traumatic, is essentially dependent on excessive alkalinity of the blood and fluids; and that a judicious use of mineral acid tonics, especially the tincture of chloride of iron, is capable, not only, of curing the disease, but also, of acting the part of an efficient prophylactic.

During the past year, Dr. REID, of Chicago, read to the Chicago Medical Society an interesting paper on catalytic changes in the blood, more especially in the class of diseases usually called zymotic. And the subject of blood-poisoning, as a source of disease has been frequently under discussion in the same Society. The great attention which has been paid to the histology of morbid products, and to the morbid conditions of the fluids, has been the natural result of advances in organic chemistry, and the general use of the microscope in aid of pathological, as well as physiological, researches. Indeed, so far have these influences swayed the professional mind of the present time, that a modified *humoral pathology* has again become predominant; and the words "Blood Poisons," and "Blood Diseases," have become almost as prominent in the medical literature of the present, as the words *concoction*, *fermentation*, *humors*, *&c.*, were at an early period in the history of our art. While we do not object to any amount of investigations in the directions here alluded to, nor deny but that important diseases may arise from

subtle poisons introduced into the blood, we do protest against the ready assumption (without any adequate proof) that such poisons actually exist and constitute the efficient causes of almost all of the acute diseases with which our patients are afflicted.

It must not be forgotten, that many of the morbid conditions and products found in the blood are the *consequences* rather than the *causes* of disease; and that the organized structures are endowed with certain properties, capable of being modified so as to constitute primary morbid conditions. As these properties are intimately connected with the processes of nutrition, disintegration, calorification, and secretion, any morbid alterations of them would necessarily alter, also, the functions with which they are connected; and the latter would equally induce changes in the blood and secretions. We regret to see so prevalent a disposition among medical writers to *assume* the existence of causes of disease, whether such causes are called *blood-poisons* or not, and then boldly apply them in explanation of morbid actions and in their deductions for treatment, as though the existence and properties of the poisons or causes had been fully demonstrated. We regret it, because it is contrary to all sound rules of philosophical research, and because it is so well calculated to mislead or deceive the student. No system of pathology will be found correct, or capable of permanent sway over the minds of the profession, that does not recognize primary morbid changes or elementary forms of disease both in the fluids and solids of the human body, and make a careful discrimination between those morbid conditions of the blood which are primary and dependent on the introduction of poisonous agents from without, and those that are secondary or the result of primary changes in the properties and actions of the solids. In studying the subjects of etiology, pathology, and diagnosis, the field is so extensive, the elements or conditions involved so various, and the nature of all processes in living structures so intricate, that it requires a constant effort of the mind to avoid the adoption of conclusions founded on insufficient data, or drawn from only a partial investigation. Noth-

ing would contribute more to the advancement of practical medicine, than a more complete and patient observation of facts, and the avoidance of too hasty generalizations.

In regard to the new application of old remedies, we have but few items worthy of mention. One of the most troublesome and distressing conditions attendant upon pregnancy, especially in the earlier part of the period, is a great irritability of the gastric nerves, inducing an almost constant sense of nausea and frequent vomiting. This is sometimes continued to such a degree as to deprive the patient of food, until to the suffering is added a dangerous degree of anemia, or impoverishment of the blood.

Believing the gastric symptoms in these cases to be simply a reflex or sympathetic irritation, derived directly from a morbidly sensitive condition of the uterine nerves, I have been induced to use as remedies, both anesthetics and a certain class of narcotics. The former only in extreme cases, but the latter frequently. The narcotic which I have found most beneficial is atropine; and the best form of administration, the sugar coated pills of one fiftieth of a grain taken about twenty minutes before each meal. This form is the best because the dose is sufficient, and it can be taken without the slightest feeling of disgust or inconvenience to the patient.

The first case in which I resorted to the use of chloroform, was one of great severity. The woman was in the seventh month of pregnancy. She had been almost constantly under the depressing influence of nausea from the commencement of her pregnancy, and had rejected by vomiting so large a proportion of all the food taken, that she had become extremely anemic. For several weeks previous to my visit, she had been wholly unable to leave her bed, and so exhausted from nausea and vomiting, that the propriety of inducing premature labor had been seriously considered by her medical attendants. By giving her the sugar coated granules of atropine, at first every four hours, and subsequently at every meal-time, causing her to inhale four or five full inspirations of the vapor of chloroform immediately before taking nourishment, the vomiting was pre-

vented, and she gradually recovered, and passed through her confinement at the proper time. The same means have been found effectual in several other cases. The chloroform is given only to the extent of producing a moderately soothing effect on the sensibility of the par vagum, and may be given not only immediately before swallowing nourishment, but repeated at intervals of five or ten minutes for half an hour afterwards. In no case have I carried it to the extent of producing anæsthesia or insensibility.

Nausea from Opiates.—It is well known that one of the most serious inconveniences resulting from the use of opiates in many patients, consists in a protracted and depressing nausea with frequent vomiting, after the first narcotic effects have began to subside. During the last two years, I have seen several cases of this kind in which almost entire relief was obtained by two doses of atropine or belladonna, given at an interval of one hour. And there are probably very few patients who could not receive the benefit of opiates in attacks where they are strongly indicated, if the attending physician should provide them with suitable doses of belladonna to take at the proper interval after the exhibition of the opiate. Another very unpleasant effect of opiates, in some patients, is an excited sleepless delirium with contracted pupils. This may be speedily and almost certainly relieved by moderate doses of belladonna. The use of this remedy for correcting the unpleasant cerebral symptoms, induced by opiates used in the treatment of the bowel affections of children, is of great value.

Chlorate of Potassa in Paralysis.—I have occasionally met with cases of paralysis, that appeared to be caused by deficient oxygenation and decarbonization of the blood; thereby inducing direct loss of sensibility in portions of the nervous system. The first case of this kind that attracted my attention was a child two years old, with congenital cyanosis, from what I regarded as an open ductus arteriosus. The child's lips and nails were constantly purple, and after sleeping in a close room, it was found to have complete *hemaphlegia.* There was no fever or the slightest indications of determination of blood to the brain.

Regarding the paralysis as the result of imperfect decarbonization of the blood and the deficient stimulus of oxygen, I gave it chlorate of potassa dissolved in mucilage of gum arabic as freely as it would bear without danger of inducing irritation of the mucous membranes. After the first two days, very small doses of strychnine and citrate of iron were given in addition to the chlorate of potassa. Within twenty-four hours after commencing the treatment, the color of the lips and ends of the fingers began to improve; and in two weeks the paralysis had disappeared. The child lived about one year afterwards, and died under symptoms of cholera morbus. Another case of recent occurrence is that of an adult, male, aged about 25 years. He had been affected with cough and increasing emaciation for two years. He was brought into the Mercy Hospital with complete hemaphlegia of the right side. He was considerably emaciated; his lips purple, or leaden color; his pulse soft and weak; his skin cool and relaxed; his respirations short and frequent, with a somewhat harassing cough, accompanied by free muco-purulent expectoration. His appetite was bad, but bowels nearly regular. A physical examination showed extensive dullness on percussion over the right infraclavicular and mammary regions, and slight dullness directly below the clavicle on the left side. There was also increased vibration of voice in the same regions; and prolonged, rough, and irregular respiratory murmur with a coarse crepitant or sub-mucous rhonchus in the upper lobe of the right lung. These physical signs, in connection with the general symptoms and history of the case, left no doubt about the existence of extensive tubercular deposits in the right lung, with some points of softening, and also a smaller amount of deposit in the apex of the left lung. The capacity of the lungs for air being thus seriously diminished, the blood was deficiently arterialized, giving rise to the leaden hue of the lips, the shortness of breath, general muscular weakness, and finally to the paralysis. In this case I directed a liberal use of the chlorate of potassa dissolved in water, and a mixture of glycerine--℥iii, syrup iodide of iron--℥i, and sulphate of morphia--2grs., of which a teaspoonful was given four times a day. Al-

though paralysis of motion in the right arm and leg was complete at the time of his admission to the hospital, yet under the above treatment it improved so rapidly that in two weeks he could walk with the leg and feed himself with the hand. Several cases of paralysis, of the same pathological character, have come under my care in which there was no pulmonary or other organic disease. They were in laboring men, who were in the habit of using tobacco and alcoholic drinks somewhat freely, and sleeping in small, dirty, and unventilated rooms. The paralysis in all these cases came on in the night, without being preceded or accompanied by any febrile or inflammatory symptoms. Neither was there any subsequent reaction; but on the contrary, the pulse remained soft and slow; skin cool and muscles flaccid; bowels regular, and appetite moderate. All these cases recovered under the influence of good air; nutritious but unstimulating diet; aided by the internal use of chlorine salts and small doses of strychnine.

New Remedies.—The chief articles introduced into practice in this State, during the past two years, as new remedies, are, the sulphites of soda and lime; bromine and bromide of ammonium; iodide of lime; and permanganate of potassa.

The prominence which supposed *blood-poisons* have assumed, in the more recent pathological discussions, has led to a search for such remedial agents as were supposed to be efficient either in neutralizing the poisons or in preventing their septic influence on the constituents of the blood. With this purpose, Dr. A. Fisher, of this city, first used internally the sulphites of soda and lime, in cases of gangrene and erysipelas. The results of his cases, and many others occurring in my own practice, are familiar to nearly all the members of the Society, through the pages of the *Chicago Medical Examiner.* I have used the sulphites in a considerable number of cases of malignant erysipelas; the more severe and malignant forms of small-pox, and scarlet fever; in puerpural fever; and in a few cases of cerebro-spinal meningitis. From the trials thus far made, I am induced to believe that when these salts are present in the blood in considerable quantity, they exert a strong influence in counteracting

the effects of such poisons as are liable to be absorbed from gangrenous and suppurating surfaces. Hence in all those cases of injury or mechanical violence, followed by sufficient destruction of tissue or suppuration to endanger the absorption of pus or decomposing animal matter; in the suppurative stage of severe variola, there is danger from re-absorption of pus and virus; in the retention of clots or decaying animal matter in the uterus endangering uterine phlebitis, &c., the sulphites will be found valuable remedies. But to be effectual they must be administered early and liberally. How far their administration, during the incubative stage of eruptive fevers, would modify the severity or progress of those affections, I have not had sufficient opportunities to determine. Bromine, as a remedy used locally in hospital gangrene, has been highly recommended by many connected with the military hospitals. Having had little or no personal experience in its use, I must refer the Society to the various medical periodicals for information on the subject.

The attention of the Chicago Medical Society was first called to the use of bromide of ammonium, in certain uterine and nervous affections, by Dr. I. HATCH, of this city. It has been found most useful in chorea, epilepsy, and those severe headaches connected with irritation in the neck of the uterus. It may be given to adults in doses of from three to ten grains. The iodide of lime has been proposed and used as a substitute for the iodide of potassa. It is claimed that it possesses all the efficacy of the iodide of potassa in the treatment of disease, while it is much cheaper, less apt to irritate the stomach and bowels, and more pleasant to take.

Permanganate of potassa, has been recommended to the profession as an internal remedy for the same class of diseases as the bromide of ammonium; while locally it is used for ill-conditioned ulcers, &c. It has also been recently highly recommended by a physician of Ohio, as a remedy in the treatment of cerebro-spinal meningitis or spotted fever. He gave it in doses of from a quarter to half a grain every one, two, or three hours. It is a remedy well worth further trials in the whole class of

cerebro-spinal and nervous affections, as well as in those diseases supposed to depend on blood-poisoning.

I had intended to discuss more at length the *modus operandi* of some of the foregoing medicines, but the unexpected length of this report precludes further comments.

ARTICLE XXXII.

REPORT OF SURGICAL CASES.

By GEORGE K. AMMERMAN, M.D., Attending Surgeon to the Chicago City Hospital.

Case I.—*Removal of Tumor from the Mouth—Successful.*

Mrs. B. aged about 35, came to Chicago in May, 1860, to obtain advice relative to a swelling, situated immediately under the tongue. She stated that, about six months previously, she first noticed the growth as a small, hard, painful swelling, about the size of a bean. It came without any assignable cause. She consulted a physician who pronounced it an abscess and opened it, but without any good effect. She next consulted a surgeon, who introduced a seton through it. This was left in three days, when her sufferings became so severe that she could not possibly endure it. In the meantime, the swelling greatly increased in size, and constitutional symptoms set in.

At this period, May, 1860, I was consulted; I found her greatly reduced in strength, anemic, and with some febrile action. The tumor occupied the whole of the sublingual region, extending from side to side, and raising the tongue up into the roof of the mouth; it was hard, solid, and unyielding; the sublingual veins enlarged and tortuous; it was marked on its upper surface by a deep cicatrix, and over that part seemed more dense; it interfered with articulation and deglutition, and kept up a constant flow of saliva. It was at this time free from pain.

I advised her to return home, use iron, exercise in the open air, good diet, and await further developments before resorting

to an operation for its removal. In October, 1863, two years afterwards, she returned to this city. During this time her general health had greatly improved; she was still rather anemic, but otherwise seemed in perfect health. The tumor presented nearly the same appearance as at the previous examination; it had very slightly increased in size; seemed somewhat firmer, and to extend further back into the throat. I advised its removal, and with the assistance of Dr. C. G. SMITH, of this city, excised the whole of it, on Thursday, the 8th of October.

Its removal was attended with some dfficulty, as no anesthetic could be used, and great care required to avoid the larger vessels; the hemorrhage was slight, and altogether, she bore the operation in a most remarkable manner. The after treatment was simple; and in a few days she left the city.

I have recently been informed that her health remains good, and there are no indications of a return growth. The tumor, after its removal, was oblong in shape, as large as the largest sized hen's egg; no microscopical examination was made; to the eye it seemed to be composed exclusively of parallel fibres easily separated into layers; it was contained in a firm cyst, to which it was closely adherent.

Remarks.—The interest and importance of the above case, depends solely upon its correct diagnosis. It is quite evident, from the history, that its nature was not entirely apprehended by those gentlemen who were first consulted in regard to it; and, to be altogether candid, I must confess, that when I first saw the case, I was fully convinced of its malignancy, and advised a course of treatment in accordance therewith. The symptoms, at that time, constitutional and local, were all, in my view, in favor of such an hypothesis. At my second examination, made two years afterwards, the condition had so much changed that the diagnosis was easy enough. It had then existed for a long time; had been of slow growth; not very painful; had not involved surrounding parts, and had not produced any constitutional disturbance, all of which clearly indicated its simple, benign character. Its nature decided, the treatment was plain.

There is no question as to the utility of an operation in cases of simple, benign growths. For the most part they are entirely beyond the reach of medicines, and the only question to be settled is, whether we shall extirpate them, or let them alone, and this should always be settled by the patient, without active interference on the part of the surgeon.

CASE II.—*Amputation of the Thigh for Railroad Injury—Erysipelas—Recovery.*

W. T. B. a strong, healthy man, was run over by the cars, on Clark Street, on the morning of June 16, 1863. I saw him about two hours after the accident occurred; he was lying on the floor, in a small tenement house, screaming with pain; his right leg was crushed into a pulpy mass from the ankle to the knee; the foot and knee joint were untouched; there was no shock. He was placed on the bed, and with the assistance of Drs. ROSS and AVERY, the limb amputated in the lower third of thigh, by anterior and posterior flap method. Simple dressings were applied, and a full dose of opium given for the night.

June 17th, pulse 120—reaction high; ordered cold water to be constantly applied, by dropping, to the stump; internally, fever mixture, containing digitalis and opium, in full doses at night.

June 18th, no change, same treatment continued.

June 21st, erysipelas developed last night in outer side of wound, and extends to hip; fever high, with great pain and restlessness; ordered quinine and iron, full doses, beef tea, brandy, and opium.

June 24th, erysipelas subsiding.

July 30th, since last note patient has been very low; a large abscess formed on the outer side of the thigh, which discharged profusely, with hectic and night sweats, requiring tonics and supports in full quantities.

September 22d, ligatures came away to-day, three months after the operation.

Remarks.—Primary amputation of the thigh, for railroad injury, is among the most fatal operations in surgery; and, although nothing of special interest attends the above case, the result

renders it worthy of publication. The erysipelas was severe, resulting in the formation of an extensive abscess and profuse suppuration. The treatment of the case, throughout, was on general principles; tonics and support being the main reliance. At one time, the sulphites were tried but without producing the slightest effect.

CASE III.—*Lithotomy—Secondary Hemorrhage—Recovery.*

James Burns, aged 9, of this city, began to suffer from pain in the back, with frequent and painful micturition, in November, 1863. In December, his parents consulted Drs. MARGUERAT and HEYDOCK—Dr. M. carefully examined the case, detected stone in the bladder, and gave some general directions regarding the treatment. On Thursday, December 3d, Drs. MARGUERAT, HEYDOCK, and myself, placed the patient under the influence of an anesthetic, and with a no. 4 steel sound, confirmed the diagnosis of Dr. M., and advised an operation for its removal, to which the friends readily assented.

On Sunday, December 6th, assisted by Drs. MARGUERAT, HEYDOCK, SMITH, HOLMES, and ROSS, the patient was fully anesthetized, the limbs held in position, and the calculus removed by lateral incision. There was very little hemorrhage attending the operation, and no ligatures were necessary. The patient was placed in bed and an anodyne given for the night.

December 7th, slept well; no pain; pulse 120; ord. demulcient drinks in large quantities; opium at night.

December 9th, considerable soreness over the bladder; pulse 120; no appetite; urine passed per urethra last night; ord. oil ricini.

December 10th, free movement of the bowels; two large blood clots expelled through wound, after which urine again passed through.

December 13th, 14th, 15th, secondary hemorrhage, at intervals since last note, in large quantity; controlled by iron, injected into the wound, and taken internally; beef tea, and support freely.

December 28th, urine passed per urethra for first since hemorrhage; wound nearly closed; everything doing well.

January 6th, passed a small calculus size of a half pea.

January 21st, wound re-opened; patient anemic, with diarrhœa and great debility; ord. cod liver oil, iron, and good diet.

February 3d, wound entirely united; patient discharged—cured.

Remarks.—For the notes in the above case, I am indebted to my friend, Dr. MARGUERAT, of this city, who had charge of the case throughout, and to whose careful management the result is largely due.

The case presents few points of interest, and those very apparent in its history and notes of Dr. M. The secondary hemorrhage was not of an alarming character at any time. The amount of blood lost was doubtless greatly exaggerated by the friends, but even a few ounces in his condition was a serious drawback, and considerably prolonged the cure.

ANIMALCULÆ OF TYPHOID FEVER.—Professor Tigri, of Sienna, in Italy, has addressed a paper to the Academy of Sciences of Paris, wherein he declares that he has again found on the bodies of persons who had died of typhoid fever infusoria of the genus Bacterium.

DEATH OF A MEDICAL MAN IN A SNOW STORM.—Dr. Gallice, practising in Langeac (Houte Loire), France, perished in the snow, on the 20th ult., whilst returning, on horseback, from his country rounds. He might have been saved but for the stupidity of some people, who feared to assist him without the aid of the rural police!

ARTICLE XXXIII.

REPORT ON ORTHOPEDIC SURGERY.

By DAVID PRINCE, M.D., Jacksonville, Ill.

Presented to the Illinois State Medical Society. May, 1864.

NOTE.—The verbal analysis of the report made to the Society covered portions of the whole ground of Orthopedic Surgery. By resolution of the Society, all reports were required to be furnished for publication by the first of July. It is impracticable, with other engagements, to complete the whole report in a satisfactory manner by that date. The portion embracing the group of deformities of the feet, known by the generic term TALIPES, is all that can appear in the Transactions for this year.

It is believed that the presentation to the profession, of the latest advances in this country, and in Europe, with the improvements introduced by the writer, will enable every practitioner to cure every uncomplicated case of congenital Talipes occurring in his own practice, if undertaken during the early months of infancy.

It is also believed that most cases, under fifteen years of age, are capable of successful treatment by patience, perseverance, and skill.

Definition and Classification of the Genus, Species, and Varieties of Talipes.

The term TALIPES, [Latin, *Talus* an ankle, and *pes* a foot,] has come to be adopted as a generic term for what is known as club-foot, reel-foot, and splay-foot, or flat-foot. The name expresses only a minor element of the deformity; the ankle, in some species, being not at all displaced or deformed, but this is of no great importance, since the technical signification has been agreed upon.

Definition.—A malposition or malformation of the foot, congenital or acquired, in which from some deviation at the ankle joint, or in a greater or less number of tarsal or tarso-metatarsal

joints, the sole of the foot fails to apply to the ground in the natural position.

Of this genus there are six species:—

Talipes	Equinus,	Talipes	Dorsalis,
"	Calcaneus,	"	Plantaris,
"	Varus,	"	Valgus.

Of these species there are six possible secondary combinations or varieties, viz.:—

Talipes	Equino Varus,	Talipes	Calcaneo Varus,
"	Equino Dorsalis,	"	Calcaneo Valgus,
"	Equino Valgus,	"	Calcaneo Plantaris.

The conceptions of the tertiary combinations when once familiar, will also be simplified by classifying them thus:—

Talipes Equino Varo Dorsalis, Talipes Calcaneo Varo Dorsalis,
" " Valgo Plantaris, " " Valgo Plantaris.

Talipes equinus, is the term applied to that position which, by long continued voluntary elevation of the heel to compensate for several inches shortening of the limb, becomes not only habitual, but fixed by the permanent shortening of the triceps extensor pedis, and the adaptation of the ligaments to the habitual relations of the bones of the leg and tarsus. The habitual voluntary contraction of the triceps muscle, gastronemei, plantaris longus, and soleus, terminating in the tendo achilles, becomes permanent and involuntary; after which the muscular tissue changes its character; is absorbed or in part replaced by fat, while the white fibrous tissue investments become hypertrophied, converting the muscles into ligaments both in constitution and function. The result is a compensating deformity, and to attain the best possible compensation, bringing the phalanges as nearly as possible within the vertical line of pressure, the foot comes to be more than naturally arched by the contraction of the tibialis posticus, the peroneus longus, the flexor longus digitorum, upon the back of the leg, and the adductor pollices, the flexor brevis digitorum, the abductor minimi digiti, and the musculus accessorius with corresponding shortening of the plantar fascia under the foot. The action of the long and short flexors of the toes would curl them under the

sole as the fingers are flexed upon the palm, if they were not kept out by the weight of the body upon the phalanges.

This makes the variety T. equino-dorsalis, which, in the confirmed state, is more common than either species unmixed. The deformity which has been described as originating in a voluntary attempt at compensation, may result from spasmodic contraction of one set of muscles, or paralysis of their antagonist.

Talipes Calcaneus.—A deformity in which the heel comes to the ground, and the anterior portion of the foot is drawn up by the disproportionate contraction of the tibiallis anticus, peroneus tertius, and extensor longus digitorum. This is a deformity so rare as only to be admitted as a possibility.

Talipes Calcaneo Plantaris, is a combination equally rare, in which the yielding is not chiefly in the triceps extensor pedis, but in the medio tarsal articulation between the astragalus and the calcaneum behind, and the scaphoid and cuboid before, with yielding to a smaller extent of the more anterior joints of the tarsus.

Talipes Varus.—This is the most common of all the species, whether congenital or acquired, and consists in the inversion and rotation of the anterior half of the tarsus which can, to a slight degree, be imitated by taking hold of the phalanges and metatarsus, and bending the foot in the direction in which the tebialis anticus would draw it. In making this twist, the calcaneum and astragalus will become adducted as in the position which a child will sometimes assume in standing upon the outer edge of the foot.

Attention has been called to a better anatomy of this deformity, by Mr. BARWELL, in his little book, entitled, "Club-Foot without Division of Tendons," in which he gives the appropriate name "medio tarsal articulation," to the articulation between the calcaneum and the cuboid on the outside, and between the astragalus and the scaphoid upon the inside. "This is the centre of the twist, which, in a delicate foot, can almost be imitated inward, while outward, or in the opposite direction, there is very little capability of a twist to bring down the inner side of the sole."

In this species there is no important contraction of the tri ceps, through the tendo achillis, or, in other words, a corresponding elevation of the heel. The heel is tilted over as if the hand were adducting the whole foot, by taking hold of the foot and pulling it inward. The inner or tibial edge of the foot is turned up, and the outer or fibular side turned down, and in the worst cases, carried in toward the opposite foot, so that the outer side of the dorsum of the foot comes to the ground. The sliding of the scaphoid outward upon the astragalus makes the former bone very prominent, receiving, with the cuboid and the anterior portion of the outer and lower edge of the calcaneum, the weight of the body, in standing and walking. The cuticle becomes unnaturally thickened, and between the integument and the bones, bursæ develop themselves as cushions to protect the bones from pressure in walking.

There is at first no transverse narrowing of the metatarsus and phalanges, but the pressure of walking gradually approximates the two borders of the metatarsus and phalanges; the fissure or concavity being in the plantar surface. The deformity appears to result from disproportionate contraction of the tibialis anticus, while the flexors and extensors are balanced, and the peronei muscles paralyzed. The tibialis posticus as-

Fig. 1. A Front View.

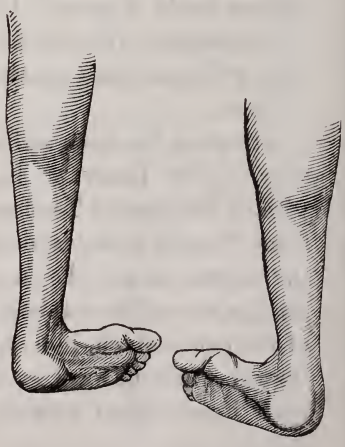

Fig. 2. A Back View.

sists in the inversion of the foot, so as to make the toes point toward the opposite foot.

This malposition is very well illustrated by the following cuts, representing the lower extremities of a gentleman fifty-two years of age, whose parents took him to Cincinnati, when an infant, to consult the best surgeons of that city. The parents were told that nothing could be done for the child.

Talipes Equino Varus.—This combination is the most common variety of talipes acquired subsequently to birth, and consists of disproportionate contraction of the triceps extensor pedis through the tendo achillis, elevating the heel and making a talipes equinus. The tibialis posticus tends to double the foot inward, while the tibialis anticus, at the same time, acts upon the inner edge of the foot, and elevates and rotates it, while the tibialis posticus, flexor longus digitorum, and the short flexors originating from the calcaneum, shorten the arch of the foot, making the compound expressed by the succession of terms, talipes equino-varo-dorsalis. Walking doubles the foot still more, antero posteriorly as well as transversely, almost completely turning it up side down, giving the gait a much worse hobble than that of simple varus, and presenting a complicated deformity, requiring apparatus equal to the versatility of the hand for its successful treatment.

Talipes Dorsalis.—An unnatural elevation of the arch of the foot, by a change in the medio-tarsal articulation, or the tarso metatarsal articulation, or in all combined. This condition has already been noticed in combination, in T. equino dorsalis, and T. equino varo dorsalis. It may exist as an uncombined deformity, either as a natural development; as the result of disease, or injury, or as an artificial production. The shape of the foot produced by the Chinese shoe, is a shortening of its length and a humping up of the instep, making a stumped appearance, a talipes dorsalis.

It may also result from a partial dislocation, breaking up the ligamentous fastenings on the dorsum of the foot, and permiting a shortening of the base of the tarso-metatarsal arch. This once occurred under the observation of the writer—a young

man falling twenty feet from a tree, and dislocating the tarso-metatarsal articulation of both feet. The deformity was never completely reduced, and the tarso-metatarsal joints remained permanently elevated, requiring shoes to be made according to special measurements.

Talipes Plantaris.—Flat foot, the condition in which the sole comes to the ground in all parts; there being little or no arch. This is the natural condition in a portion of the negro race, and is often the result of want of action of the tibialis anticus, and T. posticus, resulting in elongation of the plantar facia, from too great tension of it. In feeble children it comes from premature walking.

Talipes Valgus.—The condition in which the anterior half of the foot is carried outward in the direction opposite to that of T. varus. The tibialis anticus and tibialis posticus fail, and the peroneus longus and P. brevis, passing behind the external malleolus, pull upon the outer side of the foot and evert it. At the same time the peroneus tertius passing down in front of the ext. malleolus elevates the outer side of the foot, and tilts the astragalus and calcaneum outward in the opposite direction to that taken in T. varus.

The following cut illustrates this species, which is rarely met with, without complication.

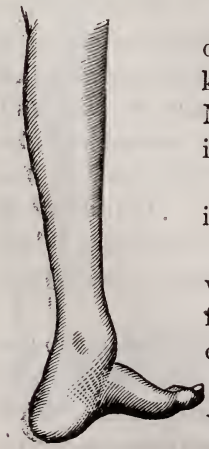

Fig. 3.

The figure is taken from the cast of the foot of a gentleman living in Boston. The cast is kept by Messrs. TIEMANN & Co., Surg. Inst. Makers, N. Y., for the purpose of making upon it the apparatus which aids him in walking.

The figure is seen from behind and on the inner side.

It will be noticed that this is a simple T. valgus, without any flattening of the arch of the foot, to make the species plantaris. The more common development is

Talipes Valgo Plantaris.—The condition in which the anterior half of the foot is carried outward and upward, bringing the inner side

of the tarsus to the ground, while the arch of the foot is lost by the relaxation of the muscles, ligaments, and fascia which sustain it. As the deformity progresses, the extension, or downward projection of the medio-tarsal joint, permits the metatarsus to rise altogether from the ground, by the action of the peroneus tertius, leaving the weight to come altogether upon the tarsus. This extreme perversion, however, constituting a talipes calcaneo-valgo plantaris, is rarely attained. When existing it must arise from the action of the extensor longus digitorum acting in concert with the peronei muscles, or more commonly from paralysis of the opposing flexor and adduct or muscles.

Talipes Calcaneo Varus is only a possible variety, resulting from disproportionate action of the tibialis anticus, and T. posticus, the triceps extensor pedis being paralyzed so as to permit the long flexors to elevate the metatarsus, while the heel remains depressed.

This classification may seem unnecessary, but it is the shortest way of describing the great variety of deformities classed under the generic term Talipes. Having once become familiar with terms, they will ever afterwards convey definite ideas, not only of the forms but of the muscular contractions which must be concerned in producing and perpetuating them.

A clear idea of these conditions will lead to a rational interpretation of the indications of treatment whether preventive or curative.

Similar directions, from the normal form of the hand, should receive a similar classification, only that their rareness makes it unnecessary. Their pathology is doubtless the same, whether con. or post. genital, depending upon paralysis of one class of muscles, or overaction of their antagonists, or both combined; or more rarely, some accidental injury, resulting in partial dislocations ending in permanent deformity, or from the contraction of the cicatrices of burns or ulcers.

Complications.

1. The complications may be congenital or acquired, absence or diminution of one or more bones, implying the impossibility

of complete restoration of the form and functions of the foot, though great improvement may, in some cases, be effected by treatment.

2. Anchylosis of one or more joints from fractures or wounds, nearly or quite hopeless of benefit from subsequent treatment.

3. Anchylosis from arthritic or periosteal inflammation, in which the treatment is chiefly preventive, by substituting, before it is too late, passive motion for absolute rest of the parts in relation to each other.

4. Contraction of cutaneous cicatrices from burns, ulcers, or wounds. The treatment should be preventive, for confirmed deformity, from these sources, is extremely difficult to overcome.

5. Rheumatism, producing talipes, or simply attacking a taliped, requiring the abatement of the rheumatism in addition to whatever else may be done.

6. Corns and bunions requiring nice adaptation of shoes where, from the age of the patient, they cannot be cured by restoring the foot to its proper form.

7. Absence or deficiency of toes.

8. Supernumerary toes which may be cut off.

9. Deviation of the forms and directions of the toes from fractures, wounds, arthritic, or periosteal inflammation, the contractions of cicatrices from burns or other injuries, from faulty shoes, from pressure of the weight of the body, or from paralysis of muscles. These deviations are sometimes incapable of remedy except by amputation of the offending toes.

Causes and Nature of Talipes and Allied Deformities.

The nice adjustment of forces by which typical symmetry is produced and maintained, in all organized growth, only needs to be contemplated to secure admiration.

The exceptional deformities, proving the possibility of imperfect adjustment of these forces, or of the occurrence of accidental impediments to their exercise, only excites our attention all the more, to the nice balance observed in the ordinary working of the law of development.

In individual failures of this organic law of symmetry, the question will arise as to the modes of deviation:—

1. Whether from excessive nutrition, analogous to that which secures the disproportionate growth in parts which are brought to perform compensating functions, as a leg or a kidney, which from the impairment or destruction of the opposite, is invited to perform more than its natural part.

2. From deficient nutrition direct, from the obstruction of the bloodvessels which supply it, or indirect, from failure of nervous supply to the capillaries of a part, failing to open them to the supply of blood, or from accidental or artificial quietude, analogous to that of muscles closely confined in splints and bandages, while a fractured bone is uniting.

3. From accidental positions, widely varying from those which are usual and which act to produce deformities, like the forces which are afterward employed to remove them. By this means, some tendons may be forced to grow too long, and others permitted to become too much shortened, while the bones which become inordinately compressed take the shapes which the altered forces tend to give them.

4. From some observations made by CRUVEILHIER, this careful pathological anatomist came to the conclusion that position of the foot, within the uterus, was often a cause of talipes.

As a moderate talipes varus is the ordinary position of the foot within the uterus, this deformity can hardly be explained upon this hypothesis; but a talipes valgus might possibly be produced by an eversion of the foot from the pull of the umbilical cord accidentally entangled around it.

Twisting and displacements and spontaneous dislocations of the knee-joint, of the hip-joint, and of the shoulder-joint, can sometimes be most plausibly explained upon this supposition.

5. From the occurrence of causes which directly compress, or partially or completely cut off, portions of the developing limbs; portions of the liquor amnii unusually condensed or solidified into sheets or shreds, may produce deep fissures in parts upon which they press; or they may completely amputate the included parts. The peculiar deformities constituting the genus

talipes can hardly be explained by reference to this class of causes. Spontaneous amputations doubtless often owe their occurrence to this cause.

6. From disease directly resulting in the death of the parts affected. The writer has in his possession an aborted fœtus of four months, which exhibits gangrene of one upper extremity, including the shoulder. If this fœtus had lived, there would have been the birth of a one-armed child. Spontaneous amputations are sometimes produced by this cause, but talipes cannot be thus explained.

7. From the union of parts of two or more individuals, resulting in redundancy of number. This is the explanation of a great variety of monstrosities, but it does not apply to talipes.

8. From an influence existing in the germinal origin of the individual, like that which determines the color of the skin, the family likeness of features, and the temperament. It is thus, that in some families there is a perpetuation, through several generations, of five fingers upon the hand and six toes upon the foot, the deficiency of a thumb or a redundant one.

Though several cases of talipes sometimes occur in one family, and in rare cases it may be repeated in the next generation, the cases are too few to favor this explanation of its occurrence. Causes acting upon the innervation of the fœtus, subsequent to the formation of the type of the individual, constitute a more probable explanation.

9. From causes set in operation through physical and mental influences of the mother. As an example of physical influence, one of the common expedients for distinguishing pregnancy from enlargements within the abdomen from other causes, is to place the hand, previously reduced in temperature, upon the mother's abdomen, to excite a convulsive movement in the fœtus. This movement may be stimulated by the compression made by the sudden tension of the abdominial muscles induced by the cold application.

On the other hand, great physical exertion, and the occurrence of grave disease affecting the constitution of the circulating fluids, are followed by diminution or cessation of the fœtal

movements, as if from some diminution of the fitness of the blood to afford to the fœtus the highest activity of nutrition. The death of the fœtus, and its expulsion is a frequent occurrence under these circumstances.

That deformities should sometimes arise from this impaired or perverted nutrition, is as probable, as that similar disturbances should, after birth, produce local congestions and inflammation, or convulsions and paralysis; some constitutional tendency, previously induced, determining the location and character of the diseased action.

Protracted mental depression, the indulgence of ungoverned anger, hate, or revenge, impairing digestion, are supposed to be unfavorable to the best development of the fœtus, while the cheerful and joyous emotions are invited as most favorable.

With the shock from the sight of a repulsive object, the mother feels a convulsive movement of the fœtus, followed by a diminution of the habitual movements, and her attention is afterward anxiously fixed upon her own sensations and those produced in her by the fœtus.

Derangement of the digestion of the mother, and the consequent impairment of the healthy and nutritive qualities of her blood, which is the source of nutriment to the fœtus, often exist for a longer or shorter period, and deformities sometimes follow, but at the birth, the mother's fears are generally found to have been needless, as a perfect form occupies the place of the dreaded deformity.

In the few cases that do occur, there are, in exceptional instances, striking resemblances to some object seen by the mother during pregnancy; but upon close scrutiny of the deformities they are found to belong to classes of excessive, deficient, perverted, or arrested development already referred to, from the various causes classified; and these resemblances are too few, in comparison with the whole number, to be worthy of any other explanation than that of coincidence. We all know how a striking coincidence takes more hold upon the mind than many discrepancies. The adoption, early in the civilization of all nations, of the theory of the direct production of special deformtieis

through the images impressed upon the mind of the mother, is probably thus best explained.

The deformities arising from spasm and paralysis are more frequent in the lower extremities, from the more feeble, more easily deranged, and less easily restored innervation of those parts. They are, therefore, more often seen in the streets, and from the awkward movements in walking, they are more repulsive than deformities of the upper extremities, which need not be made conspicuous in public places.

The late development and comparatively low innervation of the inferior half of the fœtus might be expected to result in the existence at birth of a greater number of deformities, produced by nervous derangement, in the inferior than in the superior half of the body. From this physiological order of development, as well as upon the hypothesis of coincidence, therefore, a mother who is shocked at the sight of a lame leg is more likely to have a child affected with talipes, than with a corresponding deformity of the hand, the deteriorating influence of the nervous impression upon the blood being more likely to result in spasmodic or paralytic affections of the lower than of the upper extremities of the fœtus.

As the varus species of congenital talipes are similar to the corresponding deformities developed subsequently to birth, from derangements of innervation, it is fair to infer, that in most cases, a similar derangement of innervation has existed during fœtal life. This conjecture is rendered more probable by dissection, which shows that the bones of the tarsus have their proper forms until they are afterward slightly changed in figure, by the great pressure to which they are subjected in walking. This change is much less than a superficial glance would lead one to suppose, there being nowhere a complete dislocation, but only a sliding a little further than the normal length of the ligaments permits.

The following figure, taken from "Little, on the Nature and Treatment of the Deformities of the Human Frame," sufficiently illustrates this point:—

The relative importance of paralysis and spasm, in the produc-

Fig. 4.

tion of this and other deformities, will be differently appreciated by different minds, standing in opposite positions. The following quotation from BAUER, (1) representing the older pathology, and from BARWELL, (2) representing the newer, illustrate this point.

Dr. BAUER (p. 12) thinks contraction of the sural muscles, the muscles ending in the tendo achillis, generally the chief cause of the extension of the foot in talipes equinus. He makes no account of the doubling up of the foot at the medio tarsal articulation, so carefully explained by LITTLE and BARWELL, and, equally with BARWELL, omits to mention the calcaneo-metatarsal and calcaneo-phalangeal muscles, as elements in the etiology.

Referring the disease to the shortened muscles, he says, "As a general thing, the contracted muscles have lost all susceptibility of being acted upon by the galvanic current, yet their powerful extension gives rise to unbearable pain. This fact seems to demonstrate that the muscular structure is in a state of contraction to the extent of its capacity, or the substituted tissue is void of all contractile" (expansive) "power. It is certain that innervation has not been entirely lost, while pain can be provoked by extension."

In the conditions referred to in this paragraph, the occurrence of pain may, perhaps, be better explained by bearing in mind that the muscles concerned have, for the time, acquired the conditions of ligaments.

(1) Lectures on Orthopedic Surgery, by LOUIS BAUER, M.D. Lindsay & Blakiston, Phila., 1864.

(2) The Treatment of Club-Foot without the Division of Tendons, by Mr. RICHARD BARWELL, &c. London, 1863.

We know well enough, that ligaments are susceptible of acute

pain when overstretched. When a muscle, therefore, which has lost its function from loss, change, or paralysis of its muscular substance, is pulled further than its investments of white fibrous tissue will permit, without injury to its habitual physical condition, it is in close analogy with an overstretched ligament, and it should be the seat of pain, the same as if it had originally been a ligament.

The following additional quotation is a further illustration of the spasmodic pathology:—

"After the division of tendons, many months may elapse before the galvanic current makes any impression, and in some instances the contractibility of the muscles is gone forever."

If the division of tendons is all that is done, the shortening ought to go on still more. It is, probably, the subsequent movements, effected in the course of the treatment, that restore the susceptibility of the galvanic current.

Dr. BAUER finds an advocate for the doctrine of tonic spasm, as the cause of talipes equinus, in Dr. JOSEPH PANCOAST,* of Philadelphia, who thinks, that of the three muscles uniting to make the tendo achillis, only the soleus is inordinately contracted, and accordingly, he only divides the soleus in the treatment. This is done by passing the bistoury under the gastroc nemeus, and cutting the soleus just as it becomes tendinous

* Dr. JOSEPH PANCOAST, of Philadelphia, claims that the elevation of the heel in talipes equinus is owing to the contraction of the soleus while the gastrocnemeus remains flaccid; and he accordingly divides the soleus muscle by passing a knife in under the gastrocnemeus, instead of the usual easy method of dividing the tendo achillis.

It is found in any confirmed case of talipes equinus or T. equino varus, that the soleus is rigid and incapable of extension while the gastrocnemeus is yielding. Dr. PANCOAST is, therefore, of opinion that the soleus is the autho f the mischief. The fact has another explanation. When a muscle contrac with such power that its antagonists cannot extend it, the more powerful mus cle soon becomes inextensible, and it settles into the function of a ligament, holding firmly the points to which it is attached, the muscular tissue gradually becoming atrophied, and while the size of the muscle diminishes its hardnes increases.

This is the state of the soleus in extreme talipes equinus. The upper end i attached to the tibia and fibula; and when the calcaneum is elevated as far a its ligaments and bony connexions will permit, the soleus can contract no fur-

and unites with the gastroc nemeus; the edge of the knife being carried toward the bones for this purpose.

It would be wrong, however, to leave the reader with the impression that Dr. BAUER considers spasm the uniform cause of talipes, and the following question, from p. 19, of this book, will do him justice in this respect:—

"After mature deliberation, we have come to the conclusion, that the cause in congenital as well as acquired club-foot, is preëminently defective innervation; and there is truly no reason why derangements in the nervous system should not take place in the fœtus as well as in the new-born child. In club-foot, the tibial nerve is the bearer of the difficulty, as must be inferred from the experiments of BONNET."

* * * * "All forms of varus are caused by either muscular contraction or motor paralysis, and the individual bones of the foot yield only so much in their respective positions, as they are forced to do, by the abnormal muscular traction, and the superincumbent weight of the body. Being held for some time, and acted upon in the preternatural position, they gradually mould themselves accordingly, and become consequently malformed."

In the opposite pathological view, it is claimed by that careful observer, Mr. RICHARD BARWELL, that it is not usually spasm of the stronger, but paralysis of the weaker muscles, which lies at the foundation of the deformity, and in support of this view he refers to the common experience, that in talipes the temperature is generally low, while in spasm it is generally high.

ther, and if not lengthened by an opposing power, it at length becomes hard and unyielding. This result is prevented in the gastrocnemeus by its attachment to the femur, whose movements keep this muscle active and extensible. After the soleus has become rigid from *immobility*, the gastrocnemeus continues to have *mobility*, and, therefore, it preserves its extensibility. It is not that it draws less, but that it never acquires a stationary contraction, and, therefore, never comes into an unyielding condition.

Disproportionate weakness of the flexors of the foot, with anchylosis of the knee-joint, would probably result in equal extreme contraction, and consequent rigidity of gastrocnemeus and soleus alike.

This explanation entirely destroys the value of Dr. PANCOAST's method of dividing the soleus instead of dividing the tendo achillis, in permanent elevations of the heel.

"Infants, as is well known, are subject to convulsions; and it is averred that sometimes one or more muscles, which have, during the attack, drawn the limb into malposture, do not recover from the contraction, but continue to keep the limb distorted. * * The state should be one of persistent unvarying spasm, powerful enough to overcome the antagonistic healthy muscles, and permanent enough to produce lasting change of form. Such condition does not only never come under our notice, but it is, I believe, pathologically impossible. There are, no doubt, a few cases of peculiar paralysis of the voluntary power over the muscles, while the excito-motory function continues; and in the spasm of the whole set, the strongest organ will of course predominate. Voluntary power is as much used to control as to excite. The paralysis of this power is as much evidenced by violent and uncontrollable spasm, as by incapability of subordinate movement. In my experience, such state seldom continues long, unless there be cerebral disease or deficiency, but terminates, within a limited period, in death or complete recovery, or in simple paralysis in one set, and perfect restoration of power in another set of muscles." * * * * "Laryngismus stridulus, or false croup, is attributed, by some, to spasm of certain muscles; while by other authorities, and I believe with more reason, it is considered as paralysis of a different pair. Let it be observed, also, that the squint which may come and go with other symptoms of brain mischief, or may be permanent affection, is certainly to be more rationally regarded as want of action in the outer rectus, which appropriates the whole of one nerve, (the sixth), than as spasm of the inner rectus, whose nerve supplies four other muscles of the eye and appendages. Certain, also it is, that some congenital deficiencies of the nervous system, whereof club-foot and club-hand are pretty constant accompaniments, as acephalosis, &c., &c., may, indeed must, produce paralysis, but there is no evident connexion between such deformity and spasm." p. 23.

"Altogether, there can be no doubt that paralysis is very much more frequently the cause of club-foot than the opposite condition. * * * The morbid contraction of a muscle, or

set of muscles, is hardly ever violent enough, or persistent enough, to cause a permanent alteration in the shape of the foot, where the opposers remain active."

"The muscles, while healthy, are always kept at a certain degree of tension by tonic contraction, but when any one organ or set of organs has lost its power, the opposers draw the limb in the opposite direction, by virtue of that constant and elastic sort of force. For a long time after the commencement of the paralysis, there is nothing whatever wrong with the active muscles, but after they have been allowed to become thus short, for a certain period, they begin to adapt themselves to the shortened condition, and still further contracting, as they meet with no resistance, determine at last changes of form in other structures, and so produce permanent deformity." The clearness with which the points are here made, justifies the length of the quotations.

Treatment.

It is believed that a careful consideration of the nature and pathology of the different varieties of talipes, as explained in the preceding pages, will afford the foundation for clear ideas of the indications of treatment, whether preventive or curative. The plans and expedients for meeting these indications are now the earnest study of those interested in this branch of surgery. No words of mine can be more appropriate than those of BARWELL. (p. 25.)

"It is not to be imagined, that when the limb has yielded in the direction of the healthy muscles, the sickly ones can recover sufficiently quickly or entirely to restore, by their unassisted might, the proper balance of the foot. The weakened muscles want assistance; and the way to render this, in the manner which shall best aid them to overcome the deformity, and to recover from the paralyzed or enfeebled condition, is the problem which surgeons should endeavor to solve."

It is one of the points showing the impossibility of practically and completely separating Medicine from Surgery, and the different branches of Surgery from each other, that in these cases of paralysis, previous to the occurrence of obvious deform-

ity, the disease would be said to be in the department of Medicine, though mechanical or chirurgical means are necessary to prevent the occurrence of deformity; and afterwards, when the deformity places the disease fairly in the department of Surgery, the best period for surgical treatment has been allowed to pass by: because the case was in the department of Medicine.

The Physician must study Surgery, and the Surgeon must study Medicine.

Whoever has examined a case of club-foot, by taking hold of it with his hands, may have thought, that if he only had some machine that would take hold of the foot as firmly, and yet as tenderly as does the hand, without relinquishing its grasp, and yet pulling yieldingly but persistently and without tiring out, he could cure any case. The defect of every metallic apparatus is, that while it grasps the foot firmly enough, it pulls unyieldingly, without that distribution of force among all the distorted joints, which is effected by the hand. They are, most of them, intended to act chiefly upon the tibio tarsal joint, while the most careless inspection of any species of talipes, except one of simple talipes equinus, will show that the distortion of this joint is a minor element in the case.

That an adequate substitute for the hand is a desideratum not yet furnished to the public, is sufficiently proved by the words of Dr. Bauer. (p. 23.)

"There is no mechanical apparatus, however ingeniously constructed, which could be substituted for the hand, in the treatment of talipes, with any approximate degree of efficiency. In fact, if we could without interruption, employ the hand, as a mechanical agent, we should relieve most obstinate forms of talipes, which *too frequently* withstand our mechanical appliances." This is an estimate of the importance of some substitute for the hand, with an expression of hopelessness as to its attainment.

On the other hand, Dr. Gross, in his great work on surgery, v. II, p. 1011, is well enough satisfied with our present attainments in the art, neither desiring nor expecting any improvements. He says, "It is perhaps not going too far to affirm that

these topics" (club-foot) "are as well understood now as they ever will be."

Dr. BAUER again places this estimate upon our present attainments, (p. 28), "They" (mechanical appliances) "possess no curative virtues, but retain the foot in the position in which tenotomy and the acting hand left it."

It is believed that, in the course of these pages, a process will be explained, which is a pretty adequate substitute for the hand.

The earlier experimenters in this art seem to have relied chiefly upon wood and iron, as substitutes for the hand; but so generally did they occasion ulcerations of prominent parts, that the art made no important progress until the introduction of subcutaneous section of tendons, by STROMEYER, in 1831. In a large proportion of the cases of talipes, including all the species equinus, the division of the tendo achillis, permits an immediate improvement in the position of the foot, and facilitates the further reduction of the distortion of the joints of the tarsus. This tendon had been cut at various times before STROMEYER, by making an open wound; but this procedure could never be generally adopted. Dr. H. G. DAVIS, in his report on deformities, in the Transactions of the National Medical Association, 1863, quotes ISAAC MINCIUS as having divided it in 1685; THELLENIUS in 1784; SARTORIUS in 1806; MECHAELIS in 1809; DELPECH in 1816; but none of these men could think of so simple an expedient as passing in a small knife at a point distant from the tendon, and so dividing it, that the incision through the skin should heal without suppuration. It is commonly recommended, with a sharp pointed bistoury, to puncture the skin upon the inner or tibial side of the tendon opposite the internal malleolus, or higher if the heel is very much elevated, and having withdrawn this to pass a probe-pointed bistoury between the tendon and the tibia, and while the tendon is made very tense by the hand of an assistant holding the foot, to cut the tendon by pressing the fingers upon it, thus crowding it upon the knife. If any shreds remain undivided, the fact is known by the failure of the heel to come down, and the bistoury is again partially withdrawn

and passed under them, when they are divided by the same process by which the main portion of the tendon was cut. The reason for passing the knife on the tibial side of the tendon, is the less danger of wounding, by the point of the knife, the posterior tibial artery, which lies upon the inner side, and the same reason exists for cutting towards the skin instead of passing the knife between the tendon and the skin, and cutting toward the bone. A small piece of plaster laid over the minute incision, is all the dressing that is necessary.

It is common to describe instruments peculiarly constructed for this purpose, but they are unnecessary. Many of the instruments made for tenotomy are too delicate.

Apparatus for extension is immediately applied by some, but in order to secure union of the divided ends of the tendons, by organizing exudations, it may be most safe to postpone this for a few days, and then to make the extension very gradually. It is not known that the tendo achillis, divided sub-cutaneously in early life, in the human subject, has ever failed to unite; but in an experiment which I made, some years ago, upon a dog, the divided tendo achillis united only by shreds of its investing sheath, which indeed may never have been divided.

It is suspected that the uniform success of division of the tendo achillis, as introduced by STROMEYER, gave an unmerited estimate of the importance and utility of the division of tendons and muscles in general. A reaction in this estimate has lead many to discontinue the practice of dividing tendons, except in rare cases of remarkable obstinacy, while others seem still to believe in tenotomy with undiminished zeal.

Among the former is Mr. RICHARD BARWELL, of London, who says, in the preface to his little book, "I studied these maladies from the orthopedic point of view, and while tenotomy was almost a novelty in England; was so charmed with the easy change of form, which, after such an operation, could be produced in most distortions, that I became an almost enthusiastic admirer of the procedure. After, however, following up carefully a large number of these cases, I was pained to find in how many of them the deformity more or less returned, in how many

a different, an opposite distortion supervened; while power over the limb was actually injured or destroyed in so large a majority of instances, that its retention appeared absolutely exceptional."

This language sounds very much like that of one temporarily thrown out of balance, by an extreme reaction in opinion, instead of stopping at the safe middle point.

The latest published opinions on the other side, are those of Dr. BAUER, (p. 34 of the little book already referred to), where he says, "The active forms of valgus necessitate the division of the contracted peroneus muscles, or of the whole group of the abductors, as the case may be. This is at least indisputable in inflammation of the tibio tarsal articulation. * * * * * It is difficult to steady the articulation with mechanical appliances in paralysis of the entire motor apparatus of the foot, but it is completely impossible to do so when the malposition of the latter is maintained by retraction of the peronei muscles. We at least have never succeeded by any of the devised mechanical auxiliaries. Meanwhile, the deformity increases and gradually compromises the bones of the tarsus. Between the two evils, we have to choose, and we think that division of the contracted tendons is the lesser."

Now, it is the division of these tendons which, like the peronei run in long ligamentous grooves along the tarsus, which is most objected to. It is claimed that the function of these muscles is often permanently suspended by division, either by not uniting, or by adhering to their sheaths, so as no longer to be able to act upon the bones into which they are normally inserted.

Mr. WM. ADAMS, of London, has been investigating this subject, during the last few years, and has dissected twelve feet, in which tenotomy had been performed. The results of these investigations have been published under the title "On the Reparative Process in Human Tendons." Mr. BARWELL has reduced these results to tabular form, which is here quoted:—

Table from "Barwell on Club-Foot," ed. 1863, *analyzed from "Adams on the Reparative Processes in Human Tendons."*

No. of Cases.	*Tendons divided.*	*Results Observed.*	*Time lived after operation.*
I.	Tendo achillis, Tibialis anticus,	Non-union of tibialis anticus.....	4 days.
II.	Tendo achillis, Tibialis anticus, Tibialis posticus, Flexor long. dig.	Non-union of tibialis anticus. " " " flexor longus digitorum.	11 days.
III. left.	Tendo achillis, Tibialis posticus,	Tibialis posticus adhered to the bone.	23 days.
III. right.	Tendo achillis, Tibialis posticus, Tibialis anticus,	Tibialis posticus was supposed to be but was not divided.	30 days.
IV.	Tibialis posticus,... Flexor long. dig....	Union to all surrounding parts. Non-union, held together by shreds of sheath to which other tendons also adhered.	18 days.
V.	Tendo achillis, Tibialis anticus, Tibialis posticus, Flexor long. dig.	Tibialis posticus and flexor longus digitorum adhered together and to the bone.	6 weeks.
VI.	Tendo achillis, Tibialis anticus, Tibialis posticus, Flexor long. dig.	Tibialis anticus and flexor longus digitorum adhered together and to the bone—ends of tibialis anticus hung together by shreds of sheath.	6 weeks.
In the five next cases, in Mr. ADAMS' work, the tendo achillis only was divided.			
VII.	Tendo achillis, Tibialis posticus, Flexor long. dig.	Non-union of tibialis anticus, Neither retraction nor extension of the flexor longus digitorum.	Several years.

Analysis of the Preceding Table.

Division of the Tendo Achillis, 12 Cases.

United, in Cases 12 Not United, in Cases 00

Division of the Tibialis Anticus, 4 Cases.

United, in Cases 1 Not United, in Cases 3

Adherent to surrounding parts, equally destroying the function of the muscle, in Case 1

Division of the Tibialis Posticus, 7 Cases.

Not Divided, in Case 1

United, in Cases 3 Not United, in Cases 3

Adherent to bone or surrounding parts, suspending the function of the muscles, in Cases 3, that is in all cases of non-union.

Division of the Flexor Longus Digitorum, 5 Cases.

Union in Case 1 Non-Union, in Cases 4

Adherent to surrounding parts, (among the cases classed non-union), in Cases, 2

From this analysis we may well hesitate before dividing any tendon about the foot, except the tendo achillis. If the result in these cases is of any value, the division of these tendons should only be practiced in instances in which, from permanent loss, or paralysis of the opposing muscles; a permanent loss of muscular contraction is desirable in the muscles whose tendons are to be divided.

The following interesting observations and experiments, by Dr. L. T. HEWINS, of Loda, Iroquois County, Illinois, show the influence of young age, upon the activity of cicatrix formation, to connect the divided ends of tendons, or to pull them together.

Upon a dog four years old he failed. Upon dogs ten days old, and three months old, he succeeded after removing portions of tendons. He also succeeded perfectly upon a rabbit. He observed the reproduction of tendon, or substitute for it, in the extensor digitorum manus in one man 35 years old, three-fourths of an inch, having sloughed off, and in another man aged 38, half an inch, having been lost by sloughing.

These latter cases were successes under difficulties, the wounds being open and granulating, and presenting the conditions most favoring the agglutination of the tendons to the bones and other surrounding parts. The influence of motion in elongating adhesions, and reducing shapeless masses of newly organized material to the shape and function of tendon, whether permanent or temporary, by its gradual shortening and disappearance, is well illustrated.

Loda, Ill., Sept. 12, 1862.

Divided the tendon of a healthy dog, about four years old, corresponding to the tendo achillis in man. Removed a section of the tendon so as to be sure if I could get reproduction of tendon in an animal of that age. Dressed the limb with splints and rollers, to prevent motion.

Sept. 20th, removed dressing from the limb; external wound healing kindly; no evidence of growth of tendon.

Oct. 2d, examined limb; no evidence of reproductive fascia, both superficial and deep-seated, are quite adherent to the divided ends of the tendon.

Oct. 15th, removed dressing from limb; no elongation of tendon; fascia and tendon uniting; fascia more firm than at former examination, and evidently thickening.

Dec. 1st, examined the divided tendon; find no evidence of growth in length of tendon. Fascia have united with the divided ends of the tendon to form a connecting link between the divided parts. The dog walks with a hobbling gait.

Sept. 12, 1863, one year after the division of the tendon in the above case; there is no evidence of reproduction of tendon. The divided ends of the tendon may be felt through the integument and fascia very firm; dog has a hobbling gait; is permanently lame.

Sept. 13, 1863, divided the tendon in a dog about 10 days old, corresponding to the one divided in the former case, and a portion of the tendon removed; dressed the limb to keep it at rest; dog seemed entirely healthy.

Sept. 20th, dressed the limb of the dog having the divided tendon; there is evident prolongation of tendon.

Oct. 2d, dressed young dog's leg; tendon manifestly extending so as nearly to unite.

Oct. 12th, tendon not yet united; kept on the dressing as before.

Oct. 23d, tendon not completely united, but divided ends approaching each other.

Nov. 15th, examined the young dog's leg; found the tendon entirely united; having a good degree of firmness; dog walks without halting.

Dec. 25th, divided tendon seems as strong as the undivided one of the other leg; dog walks without limping.

Feb. 2, 1864, divided tendon of a dog three months old; dressed, after removing a portion of tendon, so as to keep from motion.

Feb. 10th, dressed the young dog's leg; wound in integument healing kindly; evident formation of new tendon.

Feb. 20th, dressed the limb; tendon still growing in length.

March 2d, dressed leg; found divided ends of tendon approaching each other.

April 1st, tendon fully formed and pretty firmly united; wound has healed kindly; dog walks well.

March 3, 1864, divided the tendon in the leg of a rabbit; kept the animal still; dressed the limb to keep motionless.

March 10th, dressed the wound; looks well; tendonous organization evidently going on well.

March 20th, tendon elongated; union hopeful.

March 30th, tendon fully formed, but soft.

April 15th, tendon fully formed and more firm; animal walks well. This young animal seemed very healthy.

Nov. 4, 1862, D. S., (a German by birth), a healthy man, aged 35 years, had the extensor tendon of the middle finger, on the left hand, divided by a corn knife; wound was neglected about 14 days, by which time tendon had ulcerated, and about three-fourths of an inch of the entire tendon had sloughed out, when he applied to me for treatment; dressed the hand and kept finger extended and at rest; attempted to subdue inflammation in hand as soon as possible, (which was at the time extensive), and arrest ulceration of tendon and its necessary destruction.

After 12 weeks, new tendon had been produced to supply the waste made by previous ulceration, and the finger restored to its normal action.

April 15, 1864, Mr. J. D., a man aged 38 years, had his index finger, on left hand, seriously injured by contused wound on hand-car. April 25th, applied to me for treatment; I found about one-half inch of the extensor tendon of the finger sloughed off. I have dressed and watched the finger carefully to this date, June 2d, 1864, and by this time new tendon has formed, but is soft—I think we shall have good finger.

Mons. BOUVIER is quoted by BARWELL as having divided, in 1842, in a dog, the flexor carpi radialis, the flexor carpi ulnaris, the flexor digitorum sublimis, and the flexor digitorum profundus. In none of these did the sub-cutaneous wound unite so as to restore the use of the parts. In another experiment, the tendons did not unite at all; in another, the severed structures were massed together. Mons. BOULEY met with the last result in an experiment upon a horse.

It is probable that in some of these cases of massing together, there would be afterward an absorbtion of portions of organized exudations, which impede the movements of tendons, like that which occurs after a general union of tissues in the neighborhood of fractures, so that the result finally would not be quite as bad as might be inferred from these statements.

An objection strongly urged, even to the division of the tendo achillis, is that the "cicatrix contraction" which attends all solutions of continuity, united by the interposition of extensive organized exudations, gradually diminishes the distance between the cut extremities of the divided tendon, so that they are finally brought nearly or quite together. This makes a bad compensation for the advantage gained at first, by the necessity of the wearing of apparatus to prevent the recurrence of the deformity, while this process of cicatrix contraction is going on. In the treatment without tenotomy, the muscles is from the first made to grow longer, by a change of its nutrition induced by the force gradually and persistently applied, rendering the progress at first more slow, while in the treatment by tenotomy, this growing of the muscle to a greater length has afterward to be secured, when the case fallaciously seems to have been completed, and perhaps after the case has passed from under the supervision of the surgeon.

The following is BARWELL'S language upon this subject:—

"The reunion of the tendo achillis, after its division for talipes equinus, is almost a certainty, but it" (the division) "permanently weakens the muscles, nor is such a procedure, as a rule, an efficient cure of the disease; partly because the gastrocnemeus and soleus are not the principal muscles affected, and generally have very little to do with the malposture; partly, because contraction is sure to recur." (p. 120.)

Notwithstanding all this, however, there are occasional intances in which even Mr. BARWELL, anti tenotomist as he is, would divide the tendo achillis.

"I do not mean to deny that, occasionally, when there is either great want of development, or great degeneration, it may be necessary to divide the tendo achillis, but it should always

be avoided if possible, since it is merely a temporary expedient, which always leaves behind it a certain deformity." (p. 127.)

In contrast with this again is the language of BAUER. (p. 24.)

"As a general thing, you have only to deal with the contracted muscles, and *division* is the sovereign remedy. But if the case has existed from infancy, the bones have in form accommodated themselves to their abnormal position; the tibio tarsal articulation is crippled; then the prognosis is rendered doubtful, and the case may be irremediable."

"It is a common observation of orthopedic surgeons, that the relief of contracted muscles by tenotomy reacts most favorably upon the nutrition of the affected extremity, and nutritive supply promotes, self-evidently, its growth and development. Passive motion coöperates in the same direction."

A question of interest here arises as to what part the division of the tendo achillis takes in the restoration of the muscular function.

If the congestion of the muscle occasioned by the increased supply of blood to the tendon beyond, for the repair of its wound, favors a better nutrition, and consequent restoration of nervous power, it might be supposed that a seton or an issue applied nearer to the muscle to be affected, would, from the proximity of inflammation, do better by exciting more action in the muscle.

It is more probable that the movements of flexion and extension, which attend the treatment following the division of the tendon, and subsequent to the reunion of the divided tendon, gradually induces a lengthening of the muscular fibrils, and this lengthening is a necessary condition to their shortening under the irritation of electricity or any other irritant.

This opposing force should be either elastic or alternating, in order to obtain the most stimulating effect upon the muscles in process of restoration; permitting frequent exercise of contraction, with yielding force so graduated as to restore the length of the muscles upon the decline or cessation of their contraction.

The alternating movements of the tendons of the still par-

alyzed antagonist muscles, first pushing and then pulling these tendons, and in a minor degree pushing and pulling the muscles themselves, invites a flow of blood to the muscular substance, favoring its continued healthy nutrition, and the earliest possible revival of nervous power, when the paralyzing cause, residing in the brain, in the spinal cord, or in the course of the nerves, whether from organic lesion or sympathetic action, is removed.

If the cause of the paralysis is such a destruction of nervous substance as to result in complete and permanent paralysis, the alternating movements of the muscles will at least tend to preserve their volume, by keeping up their nutrition, by making it mechanically possible for the blood to circulate through all their cappillaries; motion being as essential to the freest circulation through the muscles as through the lungs.

The general health then has the benefit of a well distributed circulation, in addition to the local advantages of attention to this indication.

This plan of yielding force, called by Dr. Henry G. Davis, "elastic extension," is very properly denominated by him, the "American Plan," and to him is due the merit of having been the first to employ it systematically, and with a full appreciation of its value; acting in a manner similar to that of muscles, alternating in the extent of their movements with the alternations of the degrees of resistance to be overcome.

Apparently from ignorance of American medical literature, Barwell claims this plan as his own. This is one of the instances in which several claimants for originality, my be equally honest and original, the merit, however, consisting in the application of some other invention, which makes a revolution of the given art, not only easy but unavoidable.

In this case, the invention at the bottom, is the manufacture of elastic rubber, placing in every one's hands a most facile means of meeting an indication which the older surgeons saw, but had no ready means of accomplishing. (See Trans. Am. Med. Assoc., 1863.)

In cases affording obstinate resistance to reduction by exten-

sion, the progress can be greatly facilitated by the occasional application of force, while the patient is insensible from the influence of ether.

The same condition is artificially produced which occurs in a subluxation or sprain. The most tense ligamentous fibres are torn without a complete rupture. The investments of the muscular fibres in the shortened muscle are either slightly torn interstitially, or put upon extreme tension. All this is followed by increased vascularity, which is favorable to change of tissue, in obedience to the tension afterward applied to it for the purpose of elongation.

This has been a common practice among American surgeons for many years, though BARWELL, strangely enough, claims it as his peculiar invention. He says, with much apparent satisfaction, (p. 116,) "This is also a procedure of *my own* adaptation to these diseases, and is one from which very great advantage may be drawn." He very properly goes on to say, "I would limit its employment to severe cases, and would caution surgeons against the use of violence; since, when once the muscular power is annihilated by the anesthetic, very little force is required to place the foot in a normal position."

Electricity.

Electricity has been employed to remove the condition of the muscles upon which the deformity has been supposed to depend.

This subject cannot better be illustrated than by quoting from representative writers, who take opposite positions.

BAUER, already so often quoted, more for the recent date of his publication than for its scientific value, says:—

"The most efficacious remedy in behalf of innervation is electricity. It should be used with assiduity every day, and for months in continuation. It will stimlate the existing mobility, and prevent structural decay." * * * * "Electricity is the substitute for volition, and the best local gymnastic agent." "Next are friction with alcoholic liquids, with phosphorated oil, (phosphorus 3 grains dissolved in an ounce of warm almond oil), with the flesh-brush, with or without cold irrigation."

We are left to infer that he would apply the electric current to the contracted muscles, with the intention of relieving the spasm upon which the contraction is supposed to depend. This question of spasm has been already sufficiently discussed, and it may be proper to add, that as a curative agent, the galvanic current should not be applied to the muscles whose tendons it has been found necessary to divide, but to the elongated muscles, whose partial or total paralysis has permitted the shortening of their antagonist muscles.

It is obvious that when, by unresisted tonic contraction, the muscular fibres and their fasciæ have shortened to their utmost, neither electricity nor the prick of a pin can make them shorten any more. A galvanic current can make no impression which is known by movements, because this agent and other irritants only produce contraction. If, however, the muscular fibrils and their investments are first made to grow longer, by frequently repeated pulls upon them, or by constant force varying in intensity, thus restoring the muscle to a greater or less extent, to the possibility of performing its natural function: that of producing *motion*, instead of the one to which it had degenerated, that of holding parts in *position*, is the function of ligaments; then, after so much progress has been made towards the cure, it might be expected that electricity would index it by the contractions which would result from its application.

It is difficult to see, however, on what rational principle electricity should be applied to the shortened muscles with any other intention than to determine whether they could shorten any more, or to ascertain, in the progress of treatment, in a case in which a muscle had been shortened, and degenerated beyond the possibility of exciting contractions by the electric current, whether any progress had been made, or, perhaps, to throw light upon the probable replacement of the muscular substance by fatty degeneration. In the latter case, electricity could not produce movement.

The notion of Bauer, that we have only to deal with the "contracted muscles," is certainly in forgetfulness of all correct pathology. He details, in his book, cases of paralysis of the

inferior extremity, followed by permanent extension of the foot, beginning with painless contraction of the extensor muscles.

Now, what would electricity do with these muscles? It might make them contract more disproportionately, or if in too strong currents it might exhaust their excitability. What would tenotomy do to them? It would permit a greater degree of shortening of the muscle affected than could otherwise take place. We have something else to deal with than the contracted muscles.

In these cases of paralysis of all the muscles of the leg, there was an attempt at restoration of muscular power, commencing in the triceps extensor pedis. The restored contraction of these muscles having no resistence to oppose, followed the usual law of shortening, and of acquiring a more limited space of contraction, or from utter want of pull upon them, a fixedness in the shortest space, to be followed by fatty degeneration, or by absorption of the proper substance of the muscles, and a condition of inelasticity in the muscular investments. In all such cases the early use of power to counteract the muscular contraction is an imperative indication; partly to obviate the permanent contraction of the muscles which are in the process of restoration of their proper function; and partly to give time for the restoration of contractibility in the paralyzed antagonising muscles which are slower in the process of restoration.

If in the restoration of muscular contraction, referred to in these cases of paraplegia, both sets of muscles had been supplied alike, by nervous power, no deformity would have resulted. There remained a relative paralysis of the flexors of the foot—the tibialis anticus, peroneus tertius, and long extensors of the toes. If this is so, the electric current should be applied to the latter muscles, rather than to the calf of the leg.

The following quotation from R. B. TODD'S "Clinical Lectures on Paralysis and Diseases of the Nervous System," Lindsay & Blakiston's ed. p. 152, will here be in point.

"You will often be consulted as to some expedient for promoting the restoration of paralyzed limbs to their normal condition. To this question, after having given a fair trial to the

various means which have been proposed for this purpose, I must reply that I know of nothing which more decidedly benefits paralyzed limbs than a regular system of exercise; active when the patient is capable of it, passive if otherwise.

"As to the use of electricity, which is now much in vogue, or strychnia, which has been recommended, I feel satisfied, as the result of a large experience, that the former requires to be used with much caution, and that the latter is apt to do mischief, and never does good. I have seen cases in which, after the employment of electricity for some time, that agent has apparently brought on pain in the head, and has excited something like an inflammatory process in the brain. And so strychnia will also induce an analogous condition of the brain, *and will increase the rigidity* of the paralyzed muscles. Some good may occasionally be effected by the use of friction or cold water, or shampooing, all of which tend to improve the general nutrition of the nerves and muscles."

Apparatus.

In the older plans of treatment, still retained by many of our surgeons of reputation, some immovable and inelastic frame of wood or iron, properly padded, was employed to bring the foot around into proper position; the apparatus being changed for another of different shape as the restoration progressed, or adapted with joints to change with the changing shape of the foot.

The simplest and oldest form is a flat splint, to apply to the leg, with a flat, thin foot-piece, the edge of which was fastened upon the end of the splint, in the form of a cross, upon which the foot and leg was bound by roller-bandages. In contrast with the simplicity of this, are the complicated machines, invented by SCARPA, SCONTETTEN, and others, in the beginning of the great awakening upon the subject of orthopedia, about thirty years ago.

SCARPA'S shoe has an iron sole, an iron heel-piece at right angles with this, and a brace running up the leg, while a spring attached to the side of the shoe, gives a pull with some elasticity for straightening the incurved foot; all this is properly padded

and provided with straps and buckles. The vertical brace passes up on the projecting or convex side—upon the outer side in talipes varus. The illustration, fig. 5, shows the iron frame-work of this complicated machine.

Explanation.

The shoe is in a straight position, *a* the sole, *b* the semicircular portion to embrace the heel, a portion behind is cut away, leaving a hole for the end of the heel to protrude; *c* the horizontal spring for abduction of the foot; *e* a hinge in the upright portion; *f* a triangular screw-head which is turned with a key, and causes the point of the instrument to turn down; *g* another hinge; *h* another triangular screw-head, which, being turned with a key, bends the foot part outward; *i* the upright shaft or brace; *k* the semicircular part to go round the leg, and act as a fixed point of the apparatus.

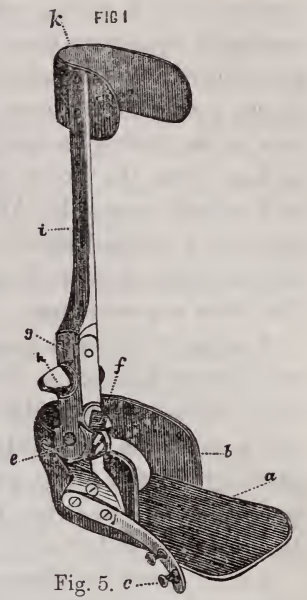

Fig. 5.

SCONTETTEN'S apparatus differs from SCARPA'S chiefly in having two shafts, one passing up on each side of the leg. Fig. 6 illustrate it without all its padding.

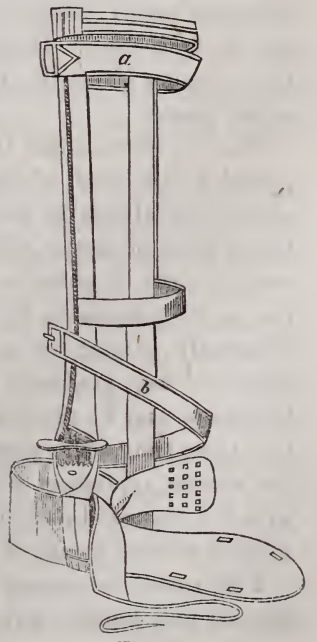

Fig. 6.

Dr. BAUER, in his work already so often quoted, employs a slight modification of SCONTETTEN'S apparatus as the utmost advance in the art at the present time.

These machines, however, are not well adapted to any species but T.

equinus and T. varus, and for each varying size of foot, an expensive apparatus must be made. They are uncomfortable, extremely liable to produce ulceration; almost destitute of elasticity, acting chiefly upon the ankle-joint, and moving the foot as a whole, failing to move the tarsal joints upon each other as is done when the foot is grasped by the hand. They are difficult to make except by skilled instrument makers. The desideratum is a method which is within the skill of any person of ordinary ingenuity, to be made of materials always at hand and free from expensiveness.

The use of adhesive plaster, introduced about the year 1850, was a great advance in the art. The method consists in cutting strips of convenient width and long enough to envelop the foot and pass up the leg nearly to the knee, there to be fastened in place by circular strips passing round the leg, over which the upright strip (or strips, for there must usually be several of them), are turned so as to clinch them to prevent their sliding.

For T. varus the plaster ascends on the outside, and for T. plantaris, and T. valgus on the inside, and for simple T. equinus, on both sides. It is sometimes found convenient to carry the fastening above the knee for greater space for application of the plaster.

This expedient holds the foot in the position in which it is placed by the hand of the surgeon, except a little sliding that plaster will always be guilty of. It very soon occurred to me that a piece of elastic rubber ribbon could be interposed in the vertical strip of adhesive plaster, so as not simply to hold the foot in the position in which it was left by the hand, but to be constantly gaining by a yielding but unintermitting stretch night and day, gradually elongating the opposing muscles and ligaments, and by the slight mobility attending the elastic rubber, permitting some passive motion in the muscles assisted by the elastic appliance, whereby their circulation is increased, with a more rapid nutrition and a more speedy accommodation to their altered length of contraction.

I for sometime supposed this to be the last advance of which the art was capable, but, ulceration sometimes occurred upon

the edge of the foot, where the circulation was too much impeded by the circular compression of the plaster around the foot. There seemed to be a lack of some expedient by which the fold of the tarsus could be straightened out, so as to restore the foot to its normal breadth. An obstinate case, attended with ulceration of a delicate skin, led me to devise an appliance which is a tolerable substitute for the hand; but before describing it, a few pages must be devoted to the plan of treatment pursued by Mr. BARWELL, to explain which, his book (on Club-Foot, &c.) seems to have been chiefly written.

The peculiarity of BARWELL'S plan consists in his method of attaching the proximal end of his tension apparatus, which is this:—Starting with the idea of making the artificial tension the exact complement of that of the partially paralyzed muscles; he aims to act as nearly as possible upon the same bones to which these muscles are attached, (and in the same direction), by adhesive plaster fastenings, while the points from which the pull comes are the origins of these muscles.

Thus, for T. varus, the fastening is made on the exterior anterior side of the upper part of the leg, at a point over the origins of the peronei muscles, in such a way as to get two-thirds of the length of the leg for the position of the rubber spring upon which he relies for the pull.

The lower attachment is made to imitate as nearly as posible the insertions of these muscles; but for retention to the skin, the lower adhesive plaster passing downward over the cuboid and fifth metatarsal bones must cross the bottom of the foot, and fasten upon the inner side above the sole. In order to get a retention of the rubber spring upon the upper part of the leg, a broad strip of adhesive plaster, twice the length of the leg, is applied over the course of the peronei muscles, over the fibula, and upon this, a piece of tin, a little narrower than the plaster, is laid, and the lower end of the plaster turned up over it, so that the inside (or sticky side) is outside, for adhering to the roller that applies round the whole, to hold it fast. The upper end of the tin is turned over from the leg, and has a hole punched in it, and into this hole an eyelet is inserted; a similar

eyelet is inserted in the adhesive plaster which passes across the bottom of the foot, and between these is stretched a rubber spring. By the combination of two or more of these expedients, he is enabled to obtain tension which imitates the combined action of the peroneus longus and p. brevis, passing behind the external malleolus, and the peroneus tertius, passing in front.

For talipes valgus, he makes a similar appliance on the inner side of the leg and foot, to supply the deficiency of the partially paralyzed tibialis anticus and tibialis posticus. The pull must here be in two directions as in the other case.

In talipes plantaris, (flat-foot), he makes a direct lift upon the hollow of the foot, by an anterior appliance compensating the deficient lift of the tibialis anticus.

In talipes equino dorsalis, he makes also a direct lift further forward. He explains this deformity as being the direct opposite of talipes plantaris or flat-foot, in which the medio-tarsal joint sinks too low, hence it must be lifted up; while in talipes equino dorsalis, the same joint rises too high, while by the contraction of the tibialis posticus, the peroneus longus, the p. brevis, and the flexor longus digitorum, the metatarsus is flexed or drawn down, bringing the toes to the ground, while again the instep or "waist" of the foot rises too high. He thinks the action of the sural muscles, through the tendo achillis, upon the calcaneum, a minor element in the deformity, and hence a particular objection to the division of the tendo achillis, in addition to the general objection arising from permanent injury to the tendon.

The account would be more nearly correct to say, that in addition to the contraction of the tibialis posticus and flexor longus digitorum, the foot is arched too high by the shortened condition of the adductor pollicis, the flexor brevis digitorum perforans, the abductor minimi digiti, and the musculus accessorius, with shortening of the plantor fascia to correspond with this disproportionate contraction of these muscles.

The pull directly in the line of these tendons, besides being a refinement of treatment difficult, and sometimes impossible to execute, is one which acts at a great mechanical disadvantage,

implying a greater pressure upon the skin, to accomplish a given amount of change of position, than would be required by a direct pull.

If it had been the design of nature to make only slow movements of the extremities, there would have been nothing gained by binding down the tendons under transverse ligamentous substances as they pass the joints. A much smaller force would have accomplished the purpose, by acting in a straight line between the origin and the insertion of any muscle. The facility of movement and grace of form secured, by giving the tendons oblique attachments, are elements unnecessary to be regarded by the orthopedist. There is this great disadvantage in this attempt to imitate the oblique action of the muscles: that the pressure upon the skin is three or four times what it is necessary to make it, when the most direct pull is obtained. The importance of gaining the most power with the least pressure upon the skin of the foot can hardly be exaggerated. Ulceration of the foot, where the pressure applies, is the greatest difficulty which it has been the study of surgeons to avoid.

It cannot be said that the muscle which is partially paralyzed is more assisted by the oblique pull than by the direct, for the passive motion of the muscle is communicated by the push and pull of the tendon; and this *to* and *fro* movement, must be the same for a given amount of motion of the parts to which the tendon is attached, whether the movement is effected by an oblique pull in the direction of the attached end of the tendon, or by a power acting at a less mechanical disadvantage, like the hand of the operator, or any apparatus which acts in a similar manner.

Illustrations of Barwell's Method.

Fig. 7 shows the manner of applying the plaster over the tibia, and the tin over it, and the plaster under the sole of the foot for T. plantaris: *a* a trapezoid piece of plaster into which an eyelet has been fixed, adhering to the sole of the foot, to act as the insertion of the tibialis anticus tendon; *d* a strip of plaster adhering over the tibialis anticus muscle, and having its lower end hanging down more than the length of the limb.

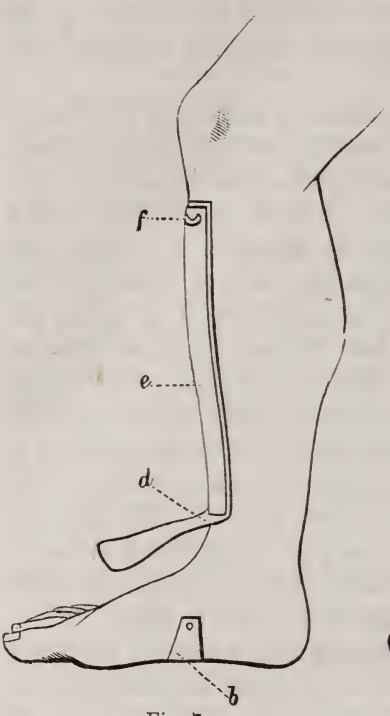

Fig. 7.

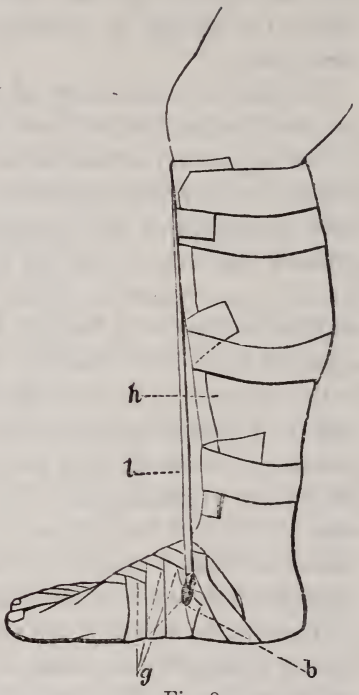

Fig. 8.

The letter *d* is upon the upper portion of this free part; *c* a piece of tin carrying at the top a wire loop; *f* the free end of the plaster is turned up on the tin, and a roller applied to hold all fast.

Figure 8 shows the process completed. The lower end of the long piece of plaster has been turned up over the lower end of the tin, and in the figure circular investments of plaster are shown instead of a roller; *g* strip of plaster surrounding the foot, but leaving out the end of the plaster; *b* having an eyelet in it; *l* a rubber spring running from this eyelet in the plaster, which comes from under the sole of the foot, up the leg to the wire loop at the upper end of the tin.

Figure 9 shows the application of the same plan in the treatment of T. varus. Two springs are shown, imitating the action of the peroneus tertius in front of the external malleolus and

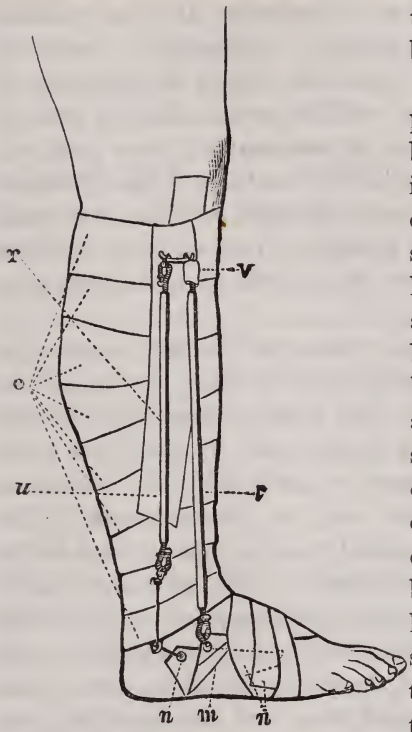

Fig. 8.

the peroneus longus, and p. brevis behind the malleolus.

m A trapezoid piece of plaster applied across the bottom of the foot and having an eyelet. The course of this, under the circular strips, is marked by dotted lines *n*. It is represented as being split so as to embrace the fifth metatarsal bone. *n* The eyelet for the attachment of the rubber spring by a piece of catgut or other strong cord. *o* Circular strapping, covering but one piece of tin, placed just behind the fibula, with its layer of plaster on either side. *v* The remainder of the longitudinal strip of plaster brought down and adherent to the circular ones. *t* A rubber spring assisting the peroneus tertius. *u* A rubber spring assisting the p. long. and p. brev. At the lower part of the attachment of the spring, marked *u*, is an arrangement for changing the direction of the force, by an attachment around the limb. *v* A short piece of rubber tube covering a hook, by which the spring is attached to the eyelet in the upper end of the tin. All the attachments are covered in the same way in practice to shield the hooks from the clothes.

In obtaining the pull from a space directly over the elongated muscles, by the plaster and tin appliances, a very considerable pressure is produced over the whole circumference of the part. We know that a moderate pressure like that produced in health by the skin and fasciæ, and by a laced stocking, when these are relaxed in varcose veins of the extremities, is favorable to mus-

cular tone, but a greater degree of pressure, like that produced by ligating a member for cramp, is unfavorable to muscular contraction. It is feared that in this method of obtaining the resistance to the pull of the artificial muscle, directly over the muscle whose weakness is to be compensated, there may be a temptation, in hands more unskilful than those of Mr. BARWELL, to bind the limb so tightly as to interfere with the most rapid restoration of the muscular function. This tightness is almost necessary, in order to prevent the tin with its underlying adhesive plaster from sliding.

The application of adhesive plaster to the foot, as employed by BARWELL, does not materially differ from the method for many years in common use. The plaster cannot be stuck to the skin as the tendon is stuck to the bone. It must have a considerable breadth of attachment or it will slide off. This necessary extent of surface cannot easily be obtained upon the foot without carrying the plaster round upon the opposite edge, so that its pull must approximate the bones of the metatarsus and of the phalanges. This force is the direct opposite of that which is produced upon an inverted club-foot (talipes varus) by walking upon it. The weight of the body, in walking, comes upon the cuboid, the fifth metatarsal bone, and corresponding phalangeal bone until, by folding and twisting, the foot is still further turned, so as to bring the weight of the body upon its dorsum.

The plaster takes hold of the opposite or inner border, (in talipes varus), and passing under the foot and up on the outside pulls in the opposite direction. In all this there is no tendency to take the longitudinal fold or doubling out of the foot. The force simply untwists the malposition of the cuboid in relation to the calcaneum, and the cuneiform bones in relation to the scaphoid, and, more than all the others, the scaphoid in relation to the astragalus. To the extent of the tilting of the astragalus in the ankle-joint, and the sliding of the calcaneum upon the astragalus, these deviations are also corrected.

It is obvious, by a glance at the skeleton, that an important agency in reducing the slight dislocation of the cuniform bones

upon the scaphoid, and the principal dislocation of the scaphoid upon the astragalus, is the unfolding of the foot to give it transverse breadth. This is one of the most important indications in cases in which the patients have been some time walking. It is easy enough to answer this indication with the thumb and fingers taking hold of the foot and twisting it in directions opposite to those of the distortion; but the thumb and fingers soon tire out. It is possible to employ a succession of hands for that purpose, and this would probably be as effectual as any more artificial method. The desideratum is the invention of apparatus which will do what the thumb and fingers can do, and to do it without tiring out, and without danger of producing ulceration from the persistency of unyielding pressure. The device to answer this end, without much expense, and in a method so easy of execution that it can be readjusted every day or two, is simply thus:—

For a patient 10 years old, take a sheet of gutta-percha one-third of an inch thick, or a sufficient number of thinner sheets to make that thickness, long enough to encircle the foot, and wide enough to extend from the middle-joint of the phalanges to the medio tarsal articulation, between the scaphoid and astragalus above, and the cuboid and calcaneum below. Apply upon both surfaces of the gutta-percha an investment of muslin of good strength, and lay the whole, thus prepared, into a pan of water nearly boiling hot. While the softening process is going on, the foot should be wrapped with a roller, protecting the prominent points with pledgets of lint or cotton.

As soon as the gutta-percha is thoroughly softened, it is taken out, still lying between its muslin investments, and so applied that its ends come together on the outside of the foot in talipes varus, where the two extremes of gutta-percha should be welded by pressure between the thumb and fingers, previously dipped into cold water to keep the material from sticking to the fingers.

In talipes valgus the extremes of gutta-percha meet and project on the inner or median side of the foot. While the material is yet warm and yielding, a square piece of pasteboard is

laid upon the dorsal surface of the foot with a corresponding piece of oiled silk or rubber cloth, underlying it, to prevent its softening by the moisture of the wet muslin investment, and a similar piece of pasteboard is applied directly opposite upon the plantar surface.

A common pair of calipers, with screw fastening, is then applied, so that one leg rests upon the pasteboard upon the dorsal, and the other upon the pasteboard upon the plantar surface. The screw is then turned to secure very firm squeezing between the opposing points. This compression is continued until the gutta-percha has become hard and unyielding, except by its elasticity. After this the calipers are removed.

A hole is then punched through the projecting gutta-percha, along side of the metatarsal bone of the little toe in varus, and of the great toe in valgus. Into this hole a cord is inserted, which is fastened to a rubber ribbon or piece of rubber luta or cylinder, which must again have its attachment above by adhesive bands below the knee, above the knee, or by a padded roll to the pelvis which is thereby encircled. This last is the least troublesome attachment, as it can, at any time, be slipped off and put on again. In the last method a knee-cap is necessary to make the tension cord follow the angle of the limb in walking and sitting. The appliance to the foot should be removed and re-applied every day in hot weather, and every alternate day in cold weather, to avoid excoriation from pressure and retained exhalations.

The pressure, if too long applied to a part, without intermission, favors absorption with ulceration; or, if acting with sufficient force, the death of the compressed parts, resulting in sloughing; while the moisture from the skin, with the ammonia which it contains, favors a softening or solution of the cuticle, thus increasing the natural sensitiveness of the parts to pressure.

Figure 10 illustrates the method of applying the apparatus, in talipes varus, to secure tension upon the pelvis.

1 Rubber spring. 2 Buckle for adjustment. 3 Gutta percha investment of the foot, to the outer side of which the tension apparatus is attached. 4 Projection of the toes beyond the investment and above the application of the upper leg of the calipers, applied upon a piece of pasteboard to secure sufficient distribution of pressure. 5 Calipers showing the screw by which the squeezing of the middle portion of the gutta-percha is produced. 6 Knee-bands. 7 Band to which the tension cord is attached, passing obliquely across to the opposite illium. 8 Band around the pelvis to hold the other band from slipping down.

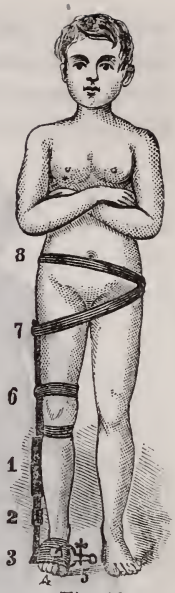

Fig. 10.

Figure 11 illustrates the same method with an attachment above the knee. It is convenient to have a secondary fastening below the knee which is not shown in the cut.

Fig. 11.

The figures refer to the same parts as in the preceding cut. The calipers are supposed to have been removed, and the apparatus to have been fully adjusted. The whole may be inclosed in a moccasin or slipper, to enable the patient to walk about. If the patient is an infant, a stocking may be drawn over the apparatus.

Figures 12 and 13 are accurate copies of photographs of a case of talipes varus in a boy nine years old before treatment, and at the conclusion of treatment, at the end of three months. The flattening down of the tarsus is more perfect than can often be secured without the vertical compression of the foot in the manner just explained. The foot appears shorter than that of the other side, because in the deformed state it had fallen

behind the other in growth, but the treatment has spread the foot out effectually, so that there is no danger of a recurrence of the deformity without a nervous derangement capable of producing it from the first.

Fig. 12. Before Treatment.

Fig. 13. After Treatment.

The following quotation from BARWELL, p. 183, aptly illustrates the effect often produced by a theory in hampering one's natural versatility, and driving him to awkward and difficult expedients. The quotation is in explanation of the difficulty of getting room upon an infant's leg for application of plasters, in a child aged six months:—

"A little more difficulty" (than usual) "had arisen from the greater adduction of the foot; this rendered it difficult to fasten on so small a thing as a child's leg and foot, the plaster representing the peroneus brevis, so that the end to which the catgut was fixed did not come against the eyelet in the tin representing the pulley. This is a difficulty which always occurs in children's cases. I find it best overcome by cutting the plaster, which is to represent the tendon of a Y shape, stretching it in the hand that it may not give way on the limb, turning down one of the ends, leaving it very short, and fastening the eyelet

into it, while the other two ends are made to adhere, one on the sole and one on the dorsum of the foot, leaving the inner metatarsal bone uncovered. In these cases, also, in spite of any difficulty in knotting it, the catgut must be tied very short; the spring too must be as short as possible."

In this BARWELL recognized, without mentioning or explaining it, the evil of that folding influence upon the foot in talipes varus, arising from pressure of the plaster upon the first metatarsal bone. To avoid this, he stops his dorsal and plantar plasters short of meeting on the tibial side of the foot.

His practical difficulties are very much increased by his theory of getting his pull from over the partially paralyzed muscles. In talipes varus, involving an elongation or loss of action of the peronei muscles, he must get his traction from over the fibula; and he is confined to the length of that bone, because these muscles have only their origins within this space.

By carrying the attachment above the knee there is found plenty of room for the rubber spring, allowing something for the inevitable sliding of the plaster.

By adopting the gutta-percha appliance to the foot, a firm fixture is secured equal to a hand continuously applied, which not only does not increase the abnormal transverse doubling of the foot, but helps to flatten it out, thereby much facilitating the rotation of the top or tibial margin of the foot inward or downward, and the bottom or fibular margin outward or upward.

The origin of this theory was in a correct appreciation of the philosophy of the subject, and the failure of the most complete success, grew out of too close an imitation of nature, where power is lost to gain rapidity of movement and beauty of form. In the artificial removal of deformities, rapidity is only the desire of a fool, and beauty is out of the question; while it is of the utmost importance to avoid all unnecessary pressure upon the skin to which the appliances are attached. The more direct the pull, in imitation of the hand of the operator, the lighter will be the pressure upon the skin, the less the discomfort to the patient, and the more practicable the employment of as much

force as the muscles and ligaments will bear without pain in these parts.

The fundamental idea which is at the foundation of my plan of treating talipes, is the invention and application of apparatus in imitation of the action of the human hand.

Iron shoes and all cumbrous inelastic and expensive machinery are thrown away. The restoration of the proper form of the foot is more likely to be the conclusion of the treatment when the muscles, tendons, and ligaments have been elongated without division, by the slower process of growth from nutrition, than when they have been factitiously elongated by division of tendons, and the interposition of cicatriceal material, material which will gradually contract to complete disappearance. The plan here explained makes it practicable to avoid division of the tendo achillis, in cases in which it might be necessary by the old methods, even by the improved plans of BARWELL.

After the treatment is complete, it is useful to steady the foot by a brace running up the side of the leg, having a joint exactly opposite the centre of motion in the ankle. The lower part is made of soft iron, so that the shape can be easily altered, and it is riveted to the sole of a common shoe by two copper rivets, the heads being placed inside the shoe.

The part above the joint, is a flat spring, conveniently made from a worn out saw. The yielding of this spring permits lateral motion at the ankle-joint, while the joint in the apparatus permits flexion and extension. At the top of the spring brace, which should reach about four-fifths of the distance from the ankle to the knee, a cross piece is fastened, made of thick tin or thin iron, of the length of half the circumference of the leg, which serves, when bent to the shape of the leg, to prevent the brace from sliding backward and forward. Over the whole length of the elastic portion of the brace, above the ankle, a leather investment of the circumference of the leg and brace is adapted, which is supplied with eyelets to lace upon the opposite side. The brace is always placed upon the side from which the deviation proceeds. The pull is, therefore, from the brace, so that there can never be any chafing of the skin against it.

This saves all necessity for cushioning it. The brace is always supporting the ankle-joint, and always yielding as the foot treads upon uneven ground. The figures will make this description more intelligible.

In figure 14 all portions of the metal above the ankle are invested by the leather, but in the cut, they are represented as being on the outside.

Fig. 14.

This apparatus will do very well for weak ankles, but should never be trusted, after treatment for talipes varus, as long as the instep is in the least too high. The foot should first, not only have the twist entirely taken out of it, but if a T. varus it should not be left in the least degree a talipes dorsalis. It is entirely practicable, by the method here described, to convert it into a T. plantaris, but this is neither necessary nor desirable. After this thorough removal of the deformity, the surgeon is not likely to be afterward troubled with the case on account of a tendency to a return of the deviation, unless there should be a return of derangement of innervation, such as originally produced it.

It may be noted in closing, that in young infants, previous to walking, and before the infolding of the transverse diameter of the foot from the weight of the body upon its outer margin, the use of the gutta-percha clamp is not very important. The adhesive plaster investment is usually sufficient, but the use of the elastic rubber ribbon is indispensable to satisfactory progress. Where the single ribbon is too delicate, its strength can be increased by doubling. It is convenient to a ttach abuckle or hook at each end of the rubber ribbon, and to work the adhesive strips into them from above and below. The facility for adjustment is then complete.

In order to obviate the lateral pressure of the plaster upon the foot, a sole of leather may be first applied under the foot, made a little wider than the sole of the foot, and the strips of

plaster wrapped around this and the foot combined, as is practiced by Dr. H. G. Davis, of New York.

It seems to me that any case of talipes, in a patient under 15 years of age, ought to be restored; but a continuance or a repetition of the derangement of innervation, which originally produced the deformity, may tend to reproduce it, requiring the continued use of an elastic aid to the enfeebled muscles, which may be worn inside of a boot, not differing in principle from the appliances already described, though more delicate and less bulky.

It is not supposed that perfection has yet been attained in this art, nor is it wise to be satisfied with the improvements already made, nor to believe that there is as much known about it now as there ever will be. If, however, we could see what improvements are to come next, we should immediately make them. Experience feels out the future, but sees the past with eyes open.

Imperfect as may be our present attainments, in this branch of the great art, every child born with uncomplicated talipes, in this and subsequent decades, has that claim for complete restoration at the hands of the profession in his own vicinage, which the accessibility of the knowledge how to do it affords.

A walking specimen of talipes, born after this time, will be a disgrace to somebody, who should have known better.

Selections.

A PLEA FOR THE HANDMAIDEN.

By EDWARD PARRISH.

We often hear Pharmacy represented as the *handmaid of medicine*, and acting on this idea some of our titled colleagues of the Medical Profession, *par excellence*, would exclude the Pharmaceutist from the great temple of medicine, or if they would vouchsafe him an entrance at all, would shut him out in the servant's hall or the scullery. On what grounds this superiority of the Doctors is founded, we may perhaps profitably

inquire; if we go to the past we shall find that the Pharmaceutists of to-day, equally with the Physicians, represent the ancient votaries of Æsculapius. If it be true, as we are told, that Hippocrates and Galen, with not a few of their eminent disciples and followers, dispensed their compounds, many of them keeping open shops, while all were perhaps more concerned with Materia Medica and Pharmacy than with either anatomy, physiology, pathology, or surgery, albeit this latter pertained chiefly to the *barber*, who still represents by his trade insignia the ancient blood-letting propensities of the craft, may we not claim at least as ancient and honorable an origin as any branch of the healing art? Measured by the standard of the *present*, we must indeed own to being occupied with the ignoble pursuits of business; we soil our hands with labor, and even demean ourselves with the insignia of self-seeking trade; yet we do produce something wherewith to benefit mankind, and is not the producer, at least, the true hero of this nineteenth century? What would medical art be now, but for the Scientific Pharmacy which evolved Morphia and Quinia, Ferrum redactum, and the Valerianates, and which has added to our new Pharmacopœa, despite the conservatism which controlled its authors, one hundred and eleven new preparations, for the amelioration of suffering and the cure of disease?

These reflections have passed through my mind in coming over some of the flagrant abuses which distinguish the conduct of physicians in our large cities towards their co-laborers, the Pharmaceutists. It is a common observation, that those practitioners who move in what are called "aristocratic circles," and who pander to the follies of the fashionable life, are most addicted to disregarding the recognized amenities of professional intercourse, especially where their humble compeers, the Pharmaceutists, are concerned. Inflated with ideas of their influence and power, and fortified by the greatness of their fees, these professional nabobs delight in patronizing some one renegade Pharmaceutist, who, by the well applied arts of the courtier, ministers to their vanity, while a delicately administered *douceur* occasionally testifies a grateful appreciation of the patronage bestowed. Some, more honest than the rest perhaps, habitually resort to a single dispensing establishment, because they really are persuaded that their prescriptions are better dispensed than at the numerous shops of respectable graduates in Pharmacy, who stand unimpeached, either in the matter of honesty or skill. One of the greatest defects in the education of professional men is, that for want of that contact with men

which a business education in early life affords, they so often do not know how to estimate the pretentions of those who lay claim to superior knowledge or skill—to use a common phrase, they are *gullible.* This trait is conspicuous in certain clergymen, who are ready, on the strength of a single apparent cure, to give their influence in favor of the pretentions of some unprincipled quack, whose groundless assumptions would at once vanish into thin air before the steady light of common sense. In these physicians it is observable in the willing credence they give to the extraordinary assertion of the pharmaceutical cicerone, to whose guidance they have willingly lent themselves in their dubious course through the labarinths of Materia Medica; meanwhile, the knowing ones indulge a feeling between indignation and contempt for the practitioner who is so easily led by the nose, and pity for the patients who are the victims of his infatuations. When we are "hectored" by our medical friends because some sufferer has been relieved of a cold or a colic by a timely dose administered "over the counter," without having paid a fee to some one entitled to exact it, we may point him to the numerous graduates of medicine, who have an office adjoining some corner shop belonging to them, where their prescriptions are compounded by a so-called apprentice or clerk, who is paid, perhaps less than a stevedore on the wharf, and whose instructions are, to add the doctor's fee to the cost of the medicine, whenever practical. Or we may direct the attention of our medical complainers to more prominent physicians, who send their prescriptions to a certain store in the neighborhood, the depository of their private receipts, and recommended by no single merit over near and more respectable dispensing stores.

If a poor sufferer comes into my shop asking relief from the pangs of toothache, I feel no hesitation in relieving him if I can, and indeed few actsof my daily routine give me more satisfaction. For this I was never assailed by the nearest dentist with the charge of having interfered with his perogative. Neither, on the same grounds, do I hold myself accountable to the medical faculty for exercising so much humanity and common sense as will help out a suffering fellow-mortal, without resort to the complexities of his diagnosis, prognosis, and other technicalities.

Let me not be charged with hostility to the medical profession. My earliest recollections and life-long associations have taught me to love and honor the high-minded physician who, with zeal for both science and humanity, devotes his life to the most laborious and responsible of pursuits; but this very respect

for the physician as he *should* be, induces me to place a proper estimate upon the physician as he too often *is*, and to protest, in the name of common honesty and fair dealing, against the unprofessional favoritism to which I have alluded as being notorious, especially in our large cities. And now, on entering the second decade in the history of this Association, let me assert for American Pharmacy the claim, founded on a common origin and kindred objects, to an equal and independent place, no longer as a handmaiden, but as a modest and docile sister, beside the more numerous and distinguished branch of the medical family. May we all strive to *deserve* such a position.— *From Proceedings of the American Pharmaceutical Association.*

Book Notices.

The following valuable new works have been received, and shall be noticed more fully as soon as our time will permit an adequate examination:—

The Principles and Practice of Obstetrics. Illustrated with 159 lithographic figures from original photographs, and with numerous woodcuts. By Hugh L. Hodge, M.D., Emeritus Prof. of Obstetrics, and Diseases of Women and Children, in the University of Pennsylvania; &c., &c., &c. Philadelphia: Blanchard & Lea. 1864.

Medical Diagnosis with Special References to Practical Medicine. A Guide to the Knowledge and Discrimination of Diseases. By J. M. DaCosta, M.D., Lecturer on Clinical Medicine and Physician to the Philadelphia Hospital; &c., &c. Philadelphia: J. B. Lippincott & Co. 1864.

A Manual of the Practice of Medicine. By Thomas Hawkes Tanner, M.D., F.L.S., &c., &c., &c. From the last London edition, enlarged and improved. Philadelphia: Lindsay & Blakiston, 1864.

The Medical Register of the City of New York, for the year 1864. By Guido Furman, M.D. Published under the auspices of the "New York Medico-Historical Society." New York: Edward O. Jennings, Printer.

The above works were received through the well-known Bookstore of W. B. Keen & Co., 148 Lake Street, Chicago, where they are for sale.

The following additional works were received through the

Bookstore of S. C. Griggs & Co., 41 Lake Street, Chicago, where they are for sale:—

Military, Medical, and Surgical Essays, prepared for the United States Sanitary Commission. Edited by William A. Hammond, M.D., Surgeon-General U.S.A. Philadelphia: J. B. Lippincott & Co.

The Philosophy of Marriage, in its Social, Moral, and Physical Relations with the Physiology of Generation in the Vegetable and Animal Kingdoms. By Michael Ryan, M.D., Member of the Royal College of Physicians and Surgeons in London. From the last London edition. Philadelphia: Lindsay & Blakiston. 1864.

Alcohol and Tobacco. Alcohol: Its Place and Power. By James Miller. The Use and Abuse of Tobacco. By John Lizars. Philadelphia: Lindsay & Blakiston. 1864.

Theory and Practice of the Movement Cure: or the Treatment of Curvatures, Deformities, &c., &c., by the Sweedish System of Localized Movements. By Charles Fayette Taylor, M.D.. Second edition; with Illustrations. Philadelphia: Lindsay & Blakiston. 1864.

A Treatise on the Chronic Inflammation and Displacement of the Unimpregnated Uterus. By Wm. H. Byford, A.M., M.D., Prof. of Obstetrics, &c., Chicago Medical College, Medical Department Lind University. Philadelphia: Lindsay & Blakiston. 1864. pp. 215.

Lest anything we might write concerning the above work of our colleague should be attributed to partiality, we prefer to copy the following notice from the *Cincinnati Lancet and Observer*:—

"We have received this little volume, sometime anticipated, from our old classmate with a great deal of pleasure and satisfaction. Its title perhaps sufficiently indicates the general scope of the work, and at the onset we might simply expect to find a treatise on the topics suggested, modified by the peculiar views, theories, and personal experience of the author. In some good degree such is the character of Prof. Byford's work, but it is something more besides.

"There are two parties who hold somewhat opposite and extreme views in uterine pathology. One party holds that the uterus has very little sympathetic influence in the system; that the diseases of the uterus are quite as often dependent upon affections of the other organs as of independent origin. Of course this class of pathologists believe that these general symptoms are to be relieved without particular attention to the local

condition or treatment of the uterus itself. This is one extreme.

"The other party holds 'that the sexual system of the female, in a state of disease, exercises a very morbid influence over nearly the whole organization. That this morbid influence is particularly exerted over the spinal and cerebral nervous systems; and that the only sure and permanent relief is found in the cure of the disordered condition of the uterus.'

"Then we find still further that there are a variety of subdivisions in these partizan groups; thus we have a class of uterine pathologists who believe that all these sympathetic disturbances grow out of various degrees of inflammation and ulceration; another class of equally respectable authorities hold that the cause of these manifestations will almost always be found in some form or degree of displacement, and these maintain that the inflammation and ulceration are of but slight importance.

"Dr. Byford is one of those who not only believe in the great sympathetic influence of the uterus, but he is amongst those who especially believe 'that inflammation and its accompanying effects' are the conditions upon which its sympathetic energies depend.

"These explanations prepare the reader to anticipate in this little volume a vigorous exponent of the practice of local treatment as the important consideration in the management of uterine affections. In his introductory and general observations our author pursues the argument to some length, but we presume our readers will scarcely care for their synopsis. Perhaps, however, the most interesting and forcible point made is the parallel which he draws between the symptoms usually attendant on uterine disease and spermatorrhora; he gives a parallel tabular statement, and the similarity is certainly remarkable, and as Dr. Byford remarks, 'affords an argument in favor of the efficacy of local causes in producing uterine inflammation, and of the powerful and general sympathetic influence of them when once originated.'

"We cannot attempt a general review of the contents of this book, we only aim to convey an idea of its scope and tendency. One of the special excellencies of the book is its individuality. It gives very fairly a systematic account of the nature, causes, and plans of treatment of the diseases embraced in his field of observation, but he does not merely give them as an editor, he does not re-vamp and re-hash the prominent authorities; indeed you are at once impressed with the idea that authorities are

kept out of sight, and the personal experience of the author is for the most part presented to you. There is of course a freshness in this style of book-making that is always acceptable to the practitioner. There is nothing in medical literature so greedily sought after, and read with so much gratification as the personal experiences and observations of respectable teachers; hence the rapidity with which works of clinical medicine, obstetrics, and surgery find a sale.

"Dr. Byford's book closes with a few illustrative cases, showing the results of strictly local treatment in cases of aggravated disease; they are only valuable however in connection with the detailed views embraced in the body of the book."

For sale by W. B. KEEN & Co. Price $2.00.

ON RHEUMATISM, GOUT, AND SCIATACA. Their Pathology, Symptoms, and Treatment. By HENRY WILLIAM FULLER, M.D., Contab., &c., &c. Third edition. Philadelphia: LINDSAY & BLAKISTON. 1864.

FULLER'S work on Rheumatism has, in a great measure, revolutionized the practice of the profession in that disease. The present prominence accorded to the alkaline treatment is due, to a considerable extent, to the influence of past editions of this work.

It is not necessary to dilate at present on the great merits of a work so widely known. Suffice it to say that no medical library is reasonably complete without it. The present edition is more full than the former ones on the subjects of Chronic Rheumatism, Neuralgic Rheumatism, Sciatica, and Rheumatic Gout. The following are the topics discussed:—

Chapter I. The Rheumatic Poison.
" II. " Rheumatic Diathesis.
" III. " Location and Classification of Rheumatism.
" IV. & V. Of Acute Rheumatism.
" VI. VII. VIII. & IX. Rheumatism of the Heart.
" X. Of Rheumatic Affection of the Brain and other Organs.
" XI. Of Rheumatic Gout.
" XII. Of Chronic Rheumatism.
" XIII. Of Sciatica and other Forms of Neuralgic Rheumatism.

Editorial.

EXPANATION.—The desire to issue the whole of the excellent report of Dr. PRINCE in one number of the EXAMINER, has caused us to delay the August number, and issue it and the September number together. All the remaining papers and reports read to the recent meeting of the Illinois State Medical Society, will appear in the October number of the EXAMINER; after which we shall resume the *Clinical* department as formerly.

SUSPENSION OF MEDICAL JOURNALS.—Since the commencement of the rebellion, many of our most valuable medical periodicals have been discontinued, and still others seem to be in a wavering condition.

The most recent suspension is that of the *American Medical Times*, published in New York City. We think such a result is hardly creditable to the profession of that great City and State. War or no war; high prices or low prices; the profession should sustain, at least, one substantial medical periodical in New York. So far as the EXAMINER is concerned, its subscription list is steadily increasing, with greater promptness in payment than at any previous period. Yet we have never wrote a *dunning* line to our subscribers, nor uttered a word of complaint on account of high prices or rebellious times. The only difficulty we encounter is to find time to perform our editorial work promptly and properly.

MEDICAL COLLEGES IN CHICAGO.—The two medical schools in this city are already beginning to receive students for the ensuing lecture term. The annual lecture season in the Rush Medical College commences on Wednesday, October 5th, and continues sixteen weeks. At the close of their last annual session it was intimated, if not distinctly promised, that important improvements should be made in the college building; and that greater facilities for hospital clinical instruction should be provided, before the opening of the next annual lecture term. We

see no indications that such changes have been made. On the contrary, the lecture rooms and clinical privileges seem to remain the same as last year. A general lecture term of *sixteen weeks;* with one or two dispensary clinics and one hospital clinic each week, comprises the whole of their annual college course.

The Annual Winter Course or lecture term in the Chicago Medical College (Med. Dept. of Lind University) will commence on Monday, October 10, 1864, and continue until the first Tuesday in March.

The lecture rooms, library, museum, and laboratory are all in excellent order; and beside a full course of five months in the college, the connection with the Mercy Hospital is such, that the senior students are enabled to attend one clinic at the bedside every day. The Clinical Course embraces three lectures each week in the medical department, one of which will be on diseases of the eye and ear; two in the surgical department, and one in the obstetric, relative to diseases of women and children.

THE CASE OF SURGEON GENERAL HAMMOND.

Some time since we announced that Dr. Hammond was on trial before a duly constituted military commission at Washington, and although that trial has been the subject of a great many newspaper comments and dispatches, we have foreborne any remarks on the subject, preferring to await the slow process and decision of the authorities, which after so long a time has been made public. The following report of the Judge Advocate gives the charges and specifications, with the findings of the court and the approval of the President. We publish the entire report for the information of our readers. In addition we see it stated in the newspapers that by the order of the Secretary of War, Mr. Solicitor Whiting is directed to prosecute Ex-Surgeon-Gen. Hammond, Messrs. Wythe & Brothers, and Wm. A. Stephens, for the recovery of $450,000 said to be the amount of which Government was defrauded by the contracts specified in the charges below.

The Court was composed as follows:—

Major-General R. J. Oglesby, U.S.V. President; Brigadier-

General W. S. Harney, U.S.A.; Brigadier-General W. J. Ketchum, U.S.V.; Brigadier-General G. S. Green, U.S.V.; Brevet Brigadier-General W. W. Morris, Colonel 2d U.S. Artillery; Brigadier-General A. P. Howe, U.S.V.; Brigadier-General J. P. Slough, U.S.V.; Brigadier-General H. E. Paine, U.S.V.; Brigadier-General J. C. Starkweather, U.S.V.; Major John A. Bingham, Judge Advocate.

JUDGE ADVOCATE GENERAL'S OFFICE, MAY 17, 1864.

To the Honorable Secretary of War:—

Brigadier-General William A. Hammond, Surgeon-General United States Army, was tried upon charges of "disorders and neglects, to the prejudice of good order and military discipline," "conduct unbecoming an officer and a gentleman," and "conduct prejudicial to good order and military discipline."

The specifications which set forth the statement of facts alledged, and found by the court to constitute these offences, are as follows:—

CHARGE 1ST.—"Disorders and neglects, to the prejudice of good order and military discipline."

Specification 1st. "In this: that he, Brigadier-General William A. Hammond, Surgeon-General United States Army, wrongfully and unlawfully contracted for, and ordered Christopher C. Cox, as acting purveyor in Baltimore, to receive blankets of one William A. Stephens, of New York. This done at Washington City, on the seventeenth day of July, in the year of our Lord one thousand eight hundred and sixty-two.

Specification 2d. "In this: that he, Brigadier-General William A. Hammond, Surgeon-General, as aforesaid, did, on the thirtieth day of May, in the year of our Lord one thousand eight hundred and sixty-three, at Washington City, wrongfully and unlawfully prohibit Christopher C. Cox, as medical purveyor for the United States in Baltimore, from purchasing drugs for the army in said city of Baltimore."

Specification 3d. "In this: that he, the said Brigadier-General, William A. Hammond, Surgeon-General United States Army, did unlawfully order and cause one George Cooper, then medical purveyor for the United States, in the city of Philadelphia, to buy of one William A. Stephens, blankets, for the use of the Government service, of inferior quality: he, the said Brigadier-General William A. Hammond, then well knowing that the blankets so ordered by him to be purchased as aforesaid were inferior in quality, and that said purveyor Cooper had refused to buy the same of said Stephens. This done at Philadelphia, in the State of Pennsylvania, on the twenty-eighth day

of May, in the year of our Lord one thousand eight hundred and sixty-two."

Specification 4th. "In this: that he, the said Brigadier-General William A. Hammond, Surgeon-General as aforesaid, on the fourteenth day of June, in the year of our Lord one thousand eight hundred and sixty-two, at the city of Washington, in the District of Columbia, unlawfully, and with intent to aid one William A. Stephens to defraud the Government of the United States, did, in writing, instruct George E. Cooper, then medical purveyor at Philadelphia, in substance as follows:

"'SIR.—You will please purchase of Mr. W. A. Stephens eight thousand pairs of blankets, of which the inclosed card is a sample. Mr. Stephens' address is box 2500, New York. The blankets are five dollars per pair.'"

Specification 5th. "In this: that he, the said Brigadier-General William A. Hammond, Surgeon-General United States Army, on the sixteenth day of June, in the year of our Lord one thousand eight hundred and sixty-two, at the city of Washington, did corruptly, and with intent to aid one William A. Stephens to defraud the Government of the United States, give to the said William A. Stephens an order in writing, in substance as follows: 'Turn over to George E. Cooper, medical purveyor at Philadelphia, eight thousand pairs of blankets;' by means whereof the said Stephens induced said Cooper, on Government account, and at an exhorbitant price, to receive of said blankets, which he had before refused to buy, seventy-six hundred and seventy-seven pairs, and for which the said Stephens received payment at Washington, in the sum of about thirty-five thousand three hundred and fourteen dollars and twenty cents."

Specification 6th. "In this: that he, the said Brigadier-General William A. Hammond, Surgeon-General United States Army, on the thirty-first day of July, in the year of our Lord eighteen hundred and sixty-two, at the city of Philadelphia, in the State of Pennsylvania, well knowing that John Wyeth & Brother had before that furnished medical supplies to the medical purveyor at Philadelphia, which were inferior in quality, deficient in quantity, and excessive in price, did corruptly, unlawfully, and with intent to aid the said John Wyeth & Brother to furnish additional large supplies to the Government of the United States, and thereby fraudulently to realize large gains thereon, and then and there give to George E. Cooper, medical purveyor at Philadelphia, an order, in writing, in substance as follows:"

"'You will at once fill up your store-houses, so as to have constantly on hand hospital supplies of all kinds for two hundred thousand men for six months. This supply I desire that you will not use without orders from me.'"

"And then and there direct said purveyor to purchase a large amount thereof, to the value of about one hundred and seventy-three thousand dollars, of said John Wyeth & Brother."

Specification 7th. "In this: that he, the said Brigadier-General William A. Hammond, Surgeon-General United States Army, about the eighth day of October, in the year of our Lord eighteen hundred and sixty-two, at Washington City, in contempt of, and contrary to the provisions of the act entitled 'An act to recognize and increase the efficiency of the medical department of the army,' approved April 16, 1862, did unlawfully direct Wyeth & Brother, of Philadelphia, to send forty thousand cans of their 'extract of beef' to various places, to wit: to Cincinnati, St. Louis, Cairo, New York, and Baltimore, and send the account to the Surgeon-General's office for payment."

CHARGE 2D.—"Conduct unbecoming an officer and a gentleman."

Specification 1st. "In this: that he, Brigadier-General William A. Hammond, Surgeon-General United States Army, on the thirteenth day of October, in the year of our Lord eighteen hundred and sixty-two, at Washington City, in a letter by him then and there addressed to George E. Cooper, declared in substance that, the said Cooper had been relieved as medical purveyor in Philadelphia, because, among other reasons, 'Halleck,' meaning Major-General Henry W. Halleck, General-in-Chef, requested as a particular favor that Murray might be ordered to Philadelphia; which declaration so made by him, the said Brigadier-General William A. Hammond, Surgeon-General, as aforesaid, was false."

An additional charge and specifications preferred against Brigadier-General William A. Hammond, Surgeon-General United States Army:

CHARGE 3D.—"Conduct to the prejudice of good order and military discipline."

Specification 1st. "In this: that he, the said Brigadier General William A. Hammond, Surgeon-General United States Army, on the eighth day of November, in the year of our Lord eighteen hundred and sixty-two, at Washington City, did unlawfully order Henry Johnson, then medical storekeeper and acting purveyor at Washington City, to purchase three thousand blankets of one J. P. Fisher, at the price of $5.90 per pair,

and to be delivered to Surgeon G. E. Cooper, U.S.A., medical purveyor at Philadelphia."

A plea of not guilty was entered upon each of the charges and specifications, and after a full hearing of the testimony for the Government and the defence, and the examination of a large amount of documentary evidence, together with the consideration of the elaborate arguments of both sides, the court rendered a finding of guilty on all the charges, and sentenced the accused to be dismissed the service, and to be forever disqualified from holding any office of honor, profit, or trust, under the Government of the United States.

In reporting upon this case, the second charge—conduct unbecoming an officer and a gentleman—will be first considered.

Under this charge it was alleged that accused made a false declaration, in writing, that Dr. Cooper had been relieved from his position as medical purveyor at Philadelphia, because among other reasons, General Halleck had requested as a special favor, that Dr. Murray might be ordered to duty in that city.

It appears from the evidence that, on the 8th of October, accused requested of the Adjutant-General that Dr. Cooper be relieved from duty as medical purveyor, at Philadelphia, by Dr. Smith. On the 13th, he wrote a letter to Dr. Cooper, as follows:—

"My Dear Doctor.—I have just received your note. The detail for your relieval from duty went to the Adjutant-General a few days since. I told Smith to tell you of it. It was with great reluctance, even with pain, that I made the detail. I am entirely satisfied with your energy, faithfulness, and acquaintance with your duty; but I found great complaints made in regard to your manners, which were constantly reiterated from medical officers and citizens of standing. I believe the change would have been made over my head had I not made it myself. I was forced to come to the conclusion that it was necessary to be done. Once before the detail was made, but I would not sign it, and this time it lay on my table several days. This is one reason. The second is even more imperative. Halleck requested, as a particular favor, that Murray might be ordered to Philadelphia. There was nothing for Murray to do there but to take your place, King's, or Smith's. The latter have both been in active service, and I thought it best to relieve you on that account.

"As A. K. Smith is, in my opinion, better suited to perform the duties of purveyor than Murray, I decided to make him purveyor, and Murray medical director of transportation.

"I assure you that, so far as your official action is concerned, I have not the least fault to find. Yours sincerely,

W. A. Hammond."

General Halleck testified, substantially that "to the best of his recollection," he never made any request of the accused to order Dr. Murray to Philadelphia; the only communication he ever made to him on the subject being a letter on the first of October, stating that Dr. Murray had served long and faithfully in the field, with the army in the West, and would like to be transferred to Eastern hospital duty, and asking a consideration of his case.

On the part of the defence, a letter from Dr. Murray to General Halleck, dated Louisville, September 27th, was submitted, in which Dr. Murray stated to General Halleck, that if he would request the Surgeon-General to order him to Philadelphia, it would "be done at once." And it was claimed by the accused —but not shown—that General Halleck, besides writing the letter of October 1st, in which he asked that Dr. Murray's desire to be ordered East on "hospital duty" might be considered, also, in some personal interview, made a verbal request that he be assigned to that duty in Philadelphia.

The argument of the Judge Advocate on this charge may be found on pages 57 to 59 of his "Reply," and that of the counsel for the accused on pages 51 to 53 of the "Defense."

The findings upon the first and third charges involve questions of law as well as of fact.

It was contended by the accused (see pages 9 and 16 of the "Defence") that the Surgeon-General had the power to control all purchases of stores for his department; to order purveyors when, at what places, of whom, and at what prices they should procure them; and further, that he might purchase them himself.

It was submitted by the Judge Advocate (see pages 4 to 7 of his "Reply") that the Acts of Congress of April 16, and July 17, 1862, limited the authority of the Surgeon-General to the direction when to purchase, and the kind and quantity to be procured; that having given this direction, his lawful authority was determined, leaving to medical purveyors, under bonds for the proper discharge of their responsibilities, the whole duty of selecting in such markets, and of buying from such persons, and upon such terms as their judgment dictated.

The former of these enactments provides "that medical purveyors shall be charged, under the direction of the Surgeon-General, with the selection and purchase of all medical supplies, including hospital stores," etc., etc.

The latter makes provision that medical purveyors shall give bond, with approved security, in such sums as the Secretary of War shall require, for the faithful performance of their duties.

It would seem, from the express language as well as from the reason of the law, that the position taken by the Judge Advocate was correct, and the decision of the court upon this issue was warranted. But it is deemed unnecessary to bestow further consideration upon this question. The findings of the court, that the accused ordered the purveyors to purchase supplies of inferior quality, well knowing them to be such, and to purchase articles at exorbitant prices, with corrupt intent to aid in defrauding the Government, and that he ordered the purchase of "additional large supplies," "corruptly," and "with intent to aid" certain persons "fraudulently to realize large gains thereon," impute much more than a mere technical overstepping of the limits of the enactment of April 16, 1862. They convict him of official corruption, abuse of power, and a gross breach of public trust.

The proof upon which these finding are based was offered in support of the 3d, 4th, 5th, 6th, and 7th specifications to the first charge. It is not requisite in this report to collate and comment upon it. The full presentation of the whole case by the Judge Advocate relieves this office of the necessity of entering into that detailed discussion of the facts and legal questions involved which, under different circumstances, would have been proper.

In his "Reply," and the "Defence" of the counsel for the accused, both of which are printed and attached to the record, the important portions of the evidence and all the prominent features of the proceedings, are presented as concisely as the voluminous character of the testimony would admit.

That the natural and necessary result of the acts of the accused as established by the record, involved a criminal spoilation of the Government treasury, which would alone have called for his dismissal from the service, cannot be denied; but when it is remembered, as shown by the proof, that this spoilation was in part accomplished by the purchase of inferior medical supplies and stores—thus compromising the health and comfort, jeopardizing the lives of the sick and wounded soldiers in the hospitals and upon the battle fields of the country—soldiers solemnly committed to the shelter and sympathies of the office held by the accused, by the very law and purpose of its creation—it must be admitted that this fearfully augments the measure of his criminality.

The trial, which lasted nearly four months, was one of the most patient and thorough that has ever occurred in our military history; and the accused had throughout the assistance of eminent and able counsel in conducting his defence. The court, which was composed of nine general officers, at the close of this prolonged investigation, declared him guilty of the charges preferred, and awarded the punishment which, in their judgment, was in accordance with the nature and degree of the offences committed; and a careful examination of the record leaves no room for doubt as to the validity of the proceedings, or the justness of the findings and sentence.

J. Holt, *Judge Advocate General.*

The following is the President's order confirming the sentence in this case:—

"The record, proceedings, findings, and sentence of the court in the foregoing case are approved; and it is ordered that Brigadier-General William A. Hammond, Surgeon-General of the United States Army, be dismissed the service, and be forever disqualified from holding any office of honor, profit, or trust under the Government of the United States.

A. Lincoln.

August 18, 1864."—*Cincinnati Lancet and Observer.*

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SECOND. The ankle-joint is constructed without iron, steel, or metal of any kind; in fact, little or no metal is used in the limb, which renders it very light.

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VALENTINE MOTT, M.D.
Emeritus Prof. of Surgery and Surgical Anatomy in the University of New York.

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BELLEVUE HOSPITAL MEDICAL COLLEGE.

City of New York.

SESSION FOR 1864-65.

THE Trustees and Faculty announce with much gratification the renewed evidence of success afforded by the Session of 1863-4. The experience of three Sessions has furnished ample proof of the importance of the new movement in behalf of medical education inaugurated by this College.

FACULTY.

ISAAC E. TAYLOR, M.D., *President.*
AUSTIN FLINT, Jr., M.D., *Secretary.*

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Frank H. Hamilton, M.D., Professor of Military Surgery, Fractures and Dislocations.
Lewis A. Sayre, M.D., Professor of Orthopedic Surgery.
Alexander B. Mott, M.D., Professor of Surgical Anatomy.
Stephen Smith, M.D., Professor of Principles of Surgery.
Isaac E. Taylor, M.D.,
George T. Elliot, M.D.,
B. Fordyce Barker, M.D., } Professors of Obstetrics and the Diseases of Women and Children.
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Austin Flint, M.D., Professor of the Principles and Practice of Medicine.
R. Ogden Doremus, M.D., Professor of Chemistry and Toxicology.
Austin Flint, Jr., M.D., Professor of Physiology and Microscopical Anatomy.
Henry D. Noyes, M.D., Demonstrator of Anatomy.
George H. Humphreys, M.D., Assistant Demonstrator of Anatomy.
N. R. Moseley, M.D., Prosector to Chair of Surgical Anatomy.
A. W. Wilkinson, M.D., Assistant to Chair of Chemistry and Toxicology.

PRELIMINARY TERM.

The Preliminary Term will commence on Wednesday, Sept. 14, 1864, and continue to the beginning of the Regular Term, viz.: for four weeks.

Instruction during this Term will consist of didactic courses on special sub-

jects of interest and practical importance, together with daily clinical lectures. The College lectures during this Term are given exclusively by Members of the Faculty. Attendance during this Term is not required, but students are earnestly solicited to attend: it being designed to make this Term not merely a nominal, but an actual extension of the period of instruction.

REGULAR TERM.

The Regular Term will commence on Wednesday, Oct. 12, 1864, and end early in March, 1865.

During the whole of the Session the student will have the opportunity of attending at least two clinical hospital lectures daily. In addition to these, four didactic lectures are given on every week-day except Saturday, in the College building within the Hospital grounds. The didactic lectures are so arranged as not to interfere with hospital attendance. Ample time is allowod for accompanying the visiting Physicians, Surgeons, and Obstetricians of the Hospital, attending clinical lectures, witnessing Surgical and Obstetrical operations, autopsies, &c., without compromising any of the courses of didactic instruction, the latter being as complete in this Institution as in colleges not connected with hospitals. Clinical and demonstrative teaching constituting the great feature of this College, the arrangements are such as to render the immense resources of the Hospitals available to the fullest extent.

All the lectures in this College are given either in the Hospital or in the College building within the Hospital grounds.

The Bellevue Hospital receives annually from ten to twelve thousand patients. The annual number of births in the Hospital is about five hundred. The Blackwell's Island Hospital contains usually about one thousand patients, a large proportion being affected with chronic diseases. This Hospital contains always several hundred cases of syphilis. In addition to the vast field of clinical instruction afforded by these Hospitals, the student may avail himself of the other Institutions under the government of the Commissioners of Public Charities and Correction, together with the varied resources for practical instruction contained in the great Metropolis.

The facilities for the study of practical Anatomy are unlimited. Anatomical material is supplied free of expense.

The fees for tickets to all the lectures, during the Preliminary and Regular Terms, amount to $105; tickets for one or any number of the seven departments of instruction may be taken out separately. The Matriculation fee is $5. The Demonstrator's ticket is $5. Graduation fee is $30. No other fees are required. The Hospital ticket is gratuitous, after Matriculation. Students who have attended two full courses in other accredited* schools, receive all the tickets for $50, exclusive of the Matriculation fee. Students who have attended two full courses in this College, or after one full course in this College, having previously attended a full course in some other accredited school, will be required to matriculate only. Graduates of other accredited schools, after three years, are required to matriculate only; prior to three years, they receive a general ticket for $50.

Payment of fees is required in all cases, and tickets must be taken out at the commencement of the Session. There are no exceptions to this rule.

Twenty-two resident Physicians and Surgeons are appointed annually, after an examination and recommendation by the Medical Board of the Hospital. They receive a salary sufficient for their support.

Students, on arriving in the city, are requested to report at once to Bellevue Hospital, situated on the East River, between 26th and 28th Streets, and inquire for the Janitor, Mr. Edwin A. Ware, who will take pains to aid them in securing comfortable accommodations, without delay.

For Circulars of the College, giving full information, &c., address the Secretary of the Faculty, Professor Austin Flint, Jr., 257 Fourth Av.

* Eclectic and Homœopathic schools are not accredited.

THE

CHICAGO MEDICAL EXAMINER.

N. S. DAVIS, M.D., EDITOR.

VOL. V. OCTOBER, 1864. NO. 10.

Original Contributions.

ARTICLE XXXIV.

OBSERVATIONS ON PUERPERAL FEVER.

BY DELASKIE MILLER, M.D., of Chicago.

Being a portion of the Report of the Committee on Obstetrics, read to the Illinois State Medical Society. May, 1864.

The prevalence of *Puerperal Fever* in certain localities within the State during the past year—the diversity of opinions entertained by the profession upon the nature of the disease—its communicability and its treatment, are reasons sufficient for making at least a brief allusion to it, in the report of your Standing Committee on Obstetrics.

More than ordinary interest attaches to the history of this disease, from the fatality which has attended its prevalence wherever it has appeared in an epidemic form, and the antagonistic views which have been entertained in regard it. And yet these reasons would not justify your Committee in occupying the time of this meeting, with considerations relating to it, if the leading minds in the profession were, at the present day, agreed or nearly in harmony in regard to two important points, viz.: its communicability from the attendant or others, to the parturient, and upon the most successful plan of treatment. But, unfortunately, upon these points the most opposite opinions are still held and taught by medical men.

The terms employed to characterize the disease, as it has prevailed at different times and places, give us some idea of its severity, such as "fatal malady"—"terrible"—its name is "a word of fear"—"appalling," &c., and the statistics which have descended to us, prove that these phrases were not the expressions of a poetical fancy. "While mortality in London is about 1 in 150, and in Lying-in Hospitals varies from 1 in 70 to 1 in 100, the mortality in the Hotel Dieu and in the Maternite was 1 in 20, sometimes 1 in 13, chiefly caused by puerperal fever. The mortality in the great Vienna Hospital was as high as 1 in 10, and even 1 in 6."

In London, in 1761, the mortality was so great that in some of the smaller Lying-in Hospitals, they buried two women in one coffin to conceal their loss. The course of the disease was similar in most other cities of Great Britain and the Continent; the statistics of which would be out of place here, by taking too much space, without elucidating any practical principles.

A more interesting, and possibly useful, object would be attained by passing in hasty review, the diverse opinions which have at different times been entertained of its nature, and the various modes of treatment which have been adopted therefrom.

Strother, in 1716, was the first to apply the epithet "*Puerperal Fever*" to this disease, but there is reason to doubt whether he entertained more correct or definite ideas of the nature of the disease, than had his predecessors, who under the general term "*Child-bed Fever*," were in the habit of referring to most of the diseases of the puerperal state.

The disease broke out as an epidemic in Paris, in 1746; and at the Hotel Dieu it prevailed with such fatality, that it is asserted scarcely any recovered, and from this time we may date our first reliable history of it. Malouin has given an accurate and faithful account of this epidemic. Tenon's description, given many years later, states that the disease had become naturalized, for from 1774 to 1816, seven out of every twelve women delivered were seized with the disease.

Among the earliest accounts of the treatment adopted in the disease, we find that of Doulcet, who relied entirely on emetics,

and it is affirmed saved several patients, and upon this he supposed that he had discovered the specific. This is not the only instance in the history of medicine in which subsequent experience has failed to sustain the claims of discoverers.

In 1768, DENMAN advised depletion on the first onset of the attack, and tartar emetic to cause vomiting afterwards.

Dr. HULME, in 1772, claimed the honor of discovering the cause of puerperal fever. He considered inflammation and gangrene of the omentum, as the essential disease, with some deterioration of the blood. He observes, "But the most capital of all remains, I mean, to cut off the purulent fomes, the chief cause of the disease, and to restore the tainted omentum and intestines to somewhat of their perfect state."

Dr. GORDON, of Aberdeen, in 1792, believed the disease to be an inflammation, but of the erysipelatous type. He advocated strongly bold and early depletion, 20 or 24 oz. at once, and if necessary 10 more soon after. "When I took away," he says, "only 10 or 12 ℥ of blood from my patient, *she always died*—but when bled freely she never failed to recover."

Mr. HEY, in 1812, resorted to active purgatives, but these proving unavailing, he was induced to resort to Dr. GORDON'S plan, taking frequently from 30 to 40 oz. and even 50 oz. of blood, and it is affirmed with good success.

Dr. ARMSTRONG, in 1819, also followed the depleting plan, by venesection and calomel purges.

Dr. GOOCH relied on venesection, leeching, and cathartics.

In 1823, Dr. COPELAND was in charge of Queen Charlotte's Hospital during the prevalence of puerperal fever, and from the failure of the systems of treatment then in vogue, he adopted a *stimulating* plan. On the first appearance of the symptoms of the malady, he administered from 8 to 16 grs. of camphor, combined with from 10 to 20 grs. of calomel, and from 1 to 3 grs. of opium, and repeated this every 4, 5, or 6 hours. Soon after the second dose of the medicine had been taken, half an ounce of spirits of turpentine, with castor oil, was administered, the stimulent and anodyne being still continued, and counter

irritants applied to the abdomen. The success of this course, he assures us, in the malignant form, was almost complete.

Without intending to elaborate the subject in all its phases, three topics will claim attention at the present time. The nature—the communicability—the treatment.

What is the nature of *Puerperal Fever?* Here we meet a most important question, for not only the treatment of the disease, but in numerous instances, the immunity of the patient from the disease, will depend upon the views which the physician may entertain. Is the disease essentially a phlegmasia? Changes are frequently met with in *post mortem* examinations, in some one part of the system or another, having the semblance of the results of inflammation, but they are not uniform in their location or appearance, and they are sometimes absent altogether, no one of which being constant. If the disease depends upon inflammation in some organ, of course, when the local inflammation is *absent*, the puerperal fever cannot be *present.*

The testimony of those who have had the largest experience in treating this disease, and the best opportunities to observe its effects upon the system concur, in one particular, viz.: that cases are met with in which no morbid appearances can be found in the tissues after death. Then common inflammation is not essential to the existence of the disease.

The disease may run its course with such rapidity as to destroy the patient in a few hours, like ARMSTRONG'S "congestive disease," and MACKINTOSH'S "latent peritonitis," but do not terms like these deceive the observer? by leading him to suppose that he comprehends the case, while he remains innocent of the slightest idea of the true nature of the malady; are we not sustained in this supposition by what has been already collated? What could be more opposite than the depletion of GORDON, HEY, and ARMSTRONG, and the stimulation of COPELAND, each claiming to treat the same disease.

The fallacy consists in not recognizing a new element in puerperal fever, not found in ordinary inflammation, which renders its nature essentially different from peritonitis, phlebitis, metritis, &c., &c. The new element, we are led to believe, is

a poison in the blood, producing its septic influence there—and through this medium producing changes sometimes in the tissues of important organs. That the disease is truly zymotic. Its history observes the laws of all poisons.

1st. It is an uniform disease; the description given of it an hundred years ago, describes the disease of to-day equally well.

2d. It selects a tissue for its seat, viz.:—the serous membranes and tissues analagous to them.

3d. The definite action is in the blood, the quantity of fibrine is increased, its quality is deteriorated.

4th. The action of the poison is modified by the quantity introduced into the circulation. When it is in excess the patient may die suddenly, without leaving any local manifestations of its presence. I am familiar with Dr. A. CLARK'S observations in regard to the valves at the extremities of the uterine sinuses, and the appearances of inflammation there in puerperal fever. But these appearances have not always been detected by other observers. When the poison is in less quantity its course is less rapid, and is followed by local changes.

By this view we are enabled to account for the diversity of opinions which have been promulgated of the nature of the disease. When partial or erroneous views are entertained of a disease, the observer will note the appearance in the individual case as representative of the class, and the account will therefore vary with each case examined, whereas, if the disease depends upon a *matires morbi* in the blood, accidental causes may determine in which organ, if any, the local changes are to be found.

It would be interesting to trace this poison to its source, and describe in detail the mode of its communication, but we can do little more than state conclusions.

1st. It may originate within the system, from the decomposition of organic matter.

2d. It may be introduced from without, by exposure to diseases characterized by ichoræmia, or,

3d. It may be communicated by the attendant, who is the vehicle of transportation from a distant case.

Notwithstanding evidence as irrefragible as can be produced, to prove the contagiousness of any disease, is abundant upon this, still it has been maintained in a most positive manner that *puerperal fever* is not communicated thus, and this position is defended by rare eloquence, and a personal experience of many years is referred to, as confirmatory of the position.

Suppose a physician in extensive practice is frequently called in consultation in cases of puerperal fever, and has not communicated the disease to his patients, what does it prove? Merely that a contagious disease is not necessarily taken by exposure. This is not peculiar to puerperal fever, for then would the prevalence of scarlatina, measles, small-pox, &c., rapidly become general upon the breaking out of the disease. No system could resist the power of the contagion; but what physician, that has practiced for any considerable time, has not known some of these diseases to affect a single member of a family, while all the others escaped. A single case coming within the knowledge of the reporter will be detailed briefly, as representative of many similar ones that might be collated from other sources.

A physician had been engaged to attend a lady in her first confinement, whose gestation had been remarkably free from every annoying symptom; she was educated, and refined in manners, and occupied a position in society, that would induce any physician to be vigilant that no accident should occur, to compromise her recovery.

This physician was called in consultation to deliver a placenta which had been retained, a long time after the birth of the child. Without much difficulty the decomposing and fetid placenta was removed; the hands and arm of the operator washed in soap and water with care; still the noxious odor adhered to the surface most tenaciously. In the night following, this physician was called to attend the lady referred to. The labor was perfectly natural, and by no means severe, but in twenty hours from the time of delivery, she was attacked by a severe chill, followed by high febrile movement in the system—tenderness of the abdomen—tympanites, and arrest of the lochia; and although treatment was commenced promptly to arrest the pro-

gress of the case, the effort was unavailing, for the patient died on the second day after the chill.

This patient was perfectly healthy; no accident occurred during or subsequent to labor, to account for the attack, yet she died of puerperal fever. Did not that physician have reason to feel that he had communicated the poison to his patient which caused her death? If this were a solitary instance, he might not censure himself, but when we remember that many cases are on record, similar, in every essential particular, the case is quite different.

How is the contagion communicated? through the atmosphere from patients affected with puerperal fever, erysipelas-gangrene, &c.; by the clothing; from the surface of the body; by the breath of the attendant. That the disease is communicable in the manner indicated, your Committee entertain not the slightest doubt; and they feel called upon to state emphatically their convictions, more especially as medical works written in a most fascinating style, inculcate an opposite view.

This leads to the conclusion that preventive means are never to be lost sight of by any one engaged in obstetric practice. The danger of communicating the disease should at once suggest the impropriety of placing parturient females contiguous to any of the diseases which we have indicated, as liable to communicate puerperal fever. A recognition of this principle would render the propriety of constructing large lying-in hospitals, or appropriating extensive wards to the reception of lying-in women, more than problematical. During the time of the writer's visit to Edinburgh, last fall, which was one of great interest, puerperal fever was prevailing there, and whenever it makes its appearance, as it frequently does, in the Royal Infimary, it is of sufficient gravity to give rise to the greatest anxiety in the minds of the accomplished and skilful physicians having charge of the institution, and we could but feel that a lying-in woman, in a cabin, with barely the necessaries for the emergency, might well be envied by the occupant of a large ward, when the disease is prevailing.

Then what is the duty of the physician, in private practice,

during an epidemic of the disease? If engaged at all in obstetric practice, manifestly to relinquish all cases of a zymotic nature, and should the disease appear in his patient, to decline further calls of that nature. A physician is not at liberty to expose the unsuspecting to the danger of this disease, and it is difficult to understand, how those who disregard these principles, can satisfy their consciences while violating these conditions.

It is not our intention to prolong this report, by a criticism on the various modes of treatment, which have from time to time been recommended, further than to raise the question of the propriety of abstracting large quantities of blood in the treatment of puerperal fever. Can a disease be removed from the system by venesection, when the whole volume of blood is affected, and has the power of reproducing itself? If we believe this disease belongs to the class of zymotics, the answer is unhesitatingly, no. Nor shall we detail minutely the plan of treatment which has, under our observation, been most successful. We can at most give only an outline sketch, nor would more than this be desirable at the present time. The plan may be indicated under three heads, viz.:—

1st. Neutralize the *matires morbi* in the system, in the uterus, and in the vagina.

2d. To eliminate the disintegrating and effete materials from the system.

3d. To support the vital forces of the system.

The most efficient agents for fulfilling the first indication yet brought into requisition, we believe to be *chlorine* and *bromine*. The former we have already used sufficiently to enable us to speak with confidence of its good effects. In regard to the latter, from a limited experience with it, we are led to hope for the most satisfactory results. These remedies are valuable in every stage of the disease, and especially indicated when the discharges are profuse or offensive. Locally, they may be applied in solution or used in the form of vapor. Applied in either form they are efficient in proportion to the completeness with which they come in contact with the source and seat of the disease. They are to be introduced not only into the *vagina*, but

also into the cavity of the *uterus*. We are far from advising a reckless system of intra uterine injections, but introduced with proper precautions, experience in a few cases, has proved them to be not only harmless but highly efficient agents. The mode proposed is, first to wash away all offensive discharges, at least as completely as practicable, then convey the remedy, properly diluted, to the part, gently through a suitable tube. If vapor be used it may be conveyed to the part by the same apparatus.

The use of chlorine in this disease is not new. It has been demonstrated to be, in this and other diseases, not only a deodorizer but a valuable disinfectant.

The local use of bromine in the treatment of puerperal fever was suggested from its acknowledged value as a remedy in erysipelas hospital gangrene, &c.

The *second indication* can best be fulfilled by the use of remedies, believed to possess the power of preventing or arresting the septic influence of the poison, already circulating with the blood, such as the mineral acids—chlorine salts—the bromides —the sulphites of lime and soda, &c.

To effect the third object, anodynes hold an important place, not only to relieve pain and irritation, but in full doses to arrest the rapid tissue metamorphoses that would take place without their use; with these tonics are indispensible, but several of the most powerful tonics have been already indicated to fulfil the second indication; nutricious diet is indispensible, and in many cases stimulants cannot be dispensed with.

Thus far it has been our object,

1st. To bring into immediate contrast, the diverse views which have been entertained of the nature and treatment of this disease.

2d. To express our belief that it is essentially zymotic in its nature.

3d. That it is communicable by the attendant as well as by other means, and

4th. To direct attention especially to the value of *Chlorine* and *Bromine*, not only in limiting the spread of the disease but also as curative agents.

ARTICLE XXXV.

CASE OF HEPATIC DISEASE.

By D. B. TRIMBLE, M.D., Chicago, Ill.

Editor Medical Examiner:

Dear Sir:—If you think the following case, from my note book, will be of sufficient interest for insertion in your journal, it is at your service.

It is a case shewing the beneficial effects of free ptyalism in severe hepatic and gastric derangement; and of the recuperative powers of cod liver oil. In addition to its valuable influence in pulmonary affections, the excellent tonic and restorative qualities of the oil in cases of emaciation and debility from other causes, I have witnessed in a number of instances, of which the following case is one:—

I was sent for on the evening of April 3, 1859, to see a person, some miles from my residence, who was said to be "dying." I found the patient, Mrs. R., aged about thirty years, affected as follows: Intense pain and tenderness in the abdomen, particularly in the epigastrium; a circumscribed swelling in the upper part of the right iliac region; obstinate constipation; a weak, fluttering, and frequent pulse; tongue dry, and coated with a dark-brown fur; skin, and albuginea oculi, of a deep icterode hue; emaciation equal to that of a person in the last stage of phthisis; complete anorexia; and suppression of catamenia since preceding May.

The history of her case, as given me by herself, and afterwards confirmed by a conversation I had with her first physician, a gentleman of intelligence and experience, was, that she was taken sick early in May, 1858, and on the 25th of that month had a severe chill, when she first sent for her physician. The ague continued for a "considerable" time; she continued to grow worse, and suffered great pain in the epigastric and right hypochondriac regions, increasing paroxysmally, but never entirely intermitting. Her disease progressed; she became

very prostrate, and greatly emaciated, and a consultation with an eminent practitioner was held, who concurred in the view of the attending physician, that it was a severe case of biliary calculi. The measures resorted to, partially and temporarily relieved the sufferings of the patient; but the emaciation continued and increased, and after a time the symptoms were renewed with greater severity. Her physicians then said they could do no more for her, and her husband called in another. The last practitioner attended her a few times, without apparent benefit, and then discontinued his visits; several weeks elapsed when they sent for me under the impression that she was dying.

After a thorough examination, I supposed it to be a case of chronic inflammation and induration of the liver, in which the stomach and bowels had become implicated. The severe paroxysms of pain, I supposed, might (as decided by the two gentlemen who first attended her,) arise from the passage of biliary calculi through the cystic duct, and ductus communis choledochus; and the irritation thus produced, combined with malarial influence, was no doubt the cause of her disease.

The immediate indications were, to allay the suffering, support the strength, and procure sleep; and I therefore prescribed mild stimulants and anodynes, Dovers powder, with wine-whey, and light liquid nourishment was my first prescription. The next day I found she had had a better night than usual; and I then directed 12 grains pill. hydrarg, to be followed by ol. ricini in five hours. As the case was almost a hopeless one, and believing that the liver must be brought into greater and healthier action, and the attending irritation of the stomach and bowels, be relieved to give any chance for a cure. I determined to push the mercurial treatment to ptyalism; supporting the strength at the same time, by as much nutriment of a proper character as the patient would bear. I therefore continued the pill. hydrarg., alternating with p. ipec. et opii., and applying ung. hydrarg. to right hypochondrium. In connection with this course I also administered taraxacum.

About this time the patient had a convulsion, and remained insensible for 18 or 20 hours. I did not see her while in this

condition; her friends supposed her to be dying, and did not send for me. In a few days the breath and gums began to give evidence of the mercurial influence, and twenty-four hours after these symptoms appeared, I suspended the medicines, except the taraxacum. The salivation increased, and became severe; gave her beef tea, wine-whey, &c.; astringent gargles, and small doses of sol. sulph. morphia, for a few days to allay the abdominal pain, which had, however, greatly abated on the appearance of ptyalism. The bowels were now moved copiously, two or three times a day, without other medicine than a dose of castor oil once in two or three days. The fæces were dark, and of a tar-like consistence, gradually becoming more natural in appearance; the jaundiced color of the skin and eyes abated; the eyes had a more animated appearance, and the appetite rather better. The pulse became slower, and more regular, and the pain had nearly subsided.

I now commenced giving her half an ounce cod liver oil, with comp. tinc. cinch. twice a day; and she soon evinced the benefit she was deriving from it. The jaundiced hue of the skin and eyes disappeared; her appetite became urgent, so that it was necessary to restrain it; bowels were regular; pain relieved; her flesh and strength rapidly increased, and on the 20th May, I ceased attending her, with directions that the oil should be continued two weeks longer. I called to see her about the middle of June, but she was not at home. Her mother said "she was well, but swollen in the abdomen." On the 19th of July, I called again, and found her at her work, perfectly restored to health, and with quite sufficient flesh. Her catamenia had returned the week previous, the first time for 18 months, and the abdominal tumefaction had subsided.

I think the effects of the treatment in this case so evident, that there is little necessity for comment. That the salivation relieved the engorged and irritated condition of the liver, and the torpid state of the alimentary canal, there can be no doubt; and the system being thus relieved, the cod liver oil aided materially in her rapid restoration to health.

Chicago, August 17, 1864.

ARTICLE XXXVI.

REPORT OF THE COMMITTEE ON SURGERY.

By E. ANDREWS, M.D., Professor of Surgery in Chicago Medical College.

Presented to the Illinois State Medical Society. May, 1864.

MILITARY SURGERY.

A considerable body of statistics has been accumulated by us since our last report, and we have condensed them for this report into tabular form.

The following list of cases, treated within the bounds of this State, was derived from the records of Mound City Hospital, under the care of that superior officer, Dr. H. WARDNER, Surgeon U. S. Vols. The labor of arranging and preparing this list was performed by Dr. M. BLOCK, a most valuable and enterprising Assistant-Surgeon, of the same Hospital:—

Name of Patient.	Date of Injury.	Nature of Injuries.	Adm. to Hospt'l.	General Treatm't.	Disch'd.	Ret'd to Duty.	Died.	Wounding Instrum't.	Direction of Wounds, &c.	Remarks.
CASE No. 1. Serg. G. F. Wallin, Co. I, 7th Iowa.	Nov. 7, 1861.	Fracture of the humerus.		Splint of binder'sboardbandages and cold water dressings.		Jan'y. 22, '62.		Minnie ball.	Ball passed through the inner margin of the biceps, anterior to brachial artery, fracturing the humerus and emerging at the insertion of the deltoid.	One large spicula and several small pieces of bone discharged, after suppuration had commenced.
CASE No. 2. W. M. Kennedy, private Co. A, 7th Iowa.	"	Wounds of bones of the tarsus.		Foot supported by splints and and bandages, dressings of cold water and arnica.	Feb'y. 20, '62.			Musket ball.	Struck the outer malleolus, passed between the os calcis and astragalus, emerging at the inner malleolus.	Great suppuration; disch'd almost well, but walking on crutches, on account of weakness of the injured foot.

Name of Patient.	Date of Injury.	Nature of Injuries.	Adm. to Hospt'l.	General Treatm't.	Disch'd.	Ret'd to Duty.	Died.	Wounding Instrum't.	Direction of Wounds, &c.	Remarks.
CASE No. 3. John Walgamuth, private Co.D,7th Iowa.	Nov. 7, 1861.	Fracture of the ulna & humerus, (left side)	Nov'r. 13, '61.	Splints; bandages and cold water dressings, tonics and stimulants internally.	Feby'. 20, '62.			Musket ball.	Struck the fore-arm about 2 inch. below elbow-joint, fracturing the ulna, passed through the joint, splitting and fracturing lower end of the humerus, and emerged about 4 in. above joint, front side of arm.	Suppuration extensive; sufferings very great; cure perfect, save anchylosis of the joint.
CASE No. 4. Leander Richie, Co.B,7th Iowa.	"	Injury of scapulæ. [coracoid process & subscapular fossa.]	"	Cold water and arnica dressings; perfect rest.		Jan'y. 22, '62.			Struck about the middle of the coracoid process, passed under the subscapularis muscle, denuding the bone at this point of its periosteum, emerging below and near the inferior angle of the scapula.	Inflammation and suppuration extensive; cure perfect.
CASE No. 5. Jas. R. Howard, private Co. B, 7th Iowa.	Nov. 7, 1861.	Fracture of the humerus; amputation of arm; two sec'dary hemorrhages.	Nov'r. 13, '61.	Simple dressing at first; incis'n in two aneurismal culs de sac, on 3d Dec., one on brachial, another on axillary artery, followed by stimulating injections.	Mar. 6. 1862.			Musket ball.	Unknown; the patient being left on the field, was captured by the rebels, & while in their hands the limb was amputated.	Discharge of 2oz. of sanguinous matter on 24th Nov'r.; considerable hemorrhage on 2d of Dec.; incisions made on the 3d, (see general treatment.) Tumor formed on dorsum of scapula, Jan. 30th, discharging matter for 2 weeks; cure perfect.
CASE No. 6. Patrick Welsh, private Co. K, 22d Ill. Inf'ty.	"	Wound of the thigh with denudation of perios-	Nov'r. 12, '61.	Bandages, cold water dress'gs, tonics, stimulants, and generous diet.			Jan. 1, 1862.	Minnie ball.	Ball entered the outer side of left thigh, near junction of upper and middle third; another entered same leg 2 inch. below knee-joint;	Suppuration involving muscles of thigh and leg; extremely offensive; on *post mortem* examina'n, entire dis-

		teum of femur.							neither ball could be found with the probe.	organization of soft parts and dinudation of periosteum of femur was discovered.
Case No. 7. J. M. Hammitt, Serg. Co. F, 7th Iowa.	"	Fracture of femur (middle third.)	Nov'r. 13, '61.	Cold water and arnica dressing; extension and box spl'ts.	March 22, '62.			Minnie ball.	Ball entered the outer side of left thigh, passed thro', emerging on inner side, a little lower than the point of entrance; fracturing in its passage the femur at the middle third.	A first emollent to 3 times its natural size; 15 days after, secondary hemorrhage from a branch of profunda artery, with considerable loss of blood, arrested by tourniquet, and ice water; suppuration extensive for 3 months; several spicule of bone discharged; cured; shortening half an inch; bone united March 11th.
Case No. 8. Jas. M. B. Gaston, private Co. C, 22d Ill. Infantry.	"	Flesh wound of the thigh with slight injury to the femur	"	Cold water dressing.		Furloughed Jan. 22, '62.		Minnie ball.	Entered left thigh, about 1 inch anterior and above the external condyle of femur, emerging through tendon of rectus femoris muscle.	Extensive suppuration leading to fear of serious injury to bone.
Case No. 9. David Clammer, Serg. Co. C, 2d Iowa Infantry.	"	Fracture of femur, upper 3d.	"	Extension splint and simple dressing.		Jan. 22, '62.		Musket ball.	Ball entered about 3 inches below the trochanter major through sartorius muscle, fracturing the bone and emerging on the opposite side. (?)	Suppuration very copious.
Case No. 10. John R. Kell, Serg. Co. G, 22d Ill. Infantry.	"	Fracture of the occipital bone. trephin'd		Depressed bones removed by trephine, serrated edges trimmed, and flaps dr'wn together by silver sutures.		Furloughed Jan. 22, '62.		Ball(?)	Ball struck and broke the occip. bone, about 1 inch to the right of lateral sinus.	Both plates of the bone were depressed and a spicula of the inner plate driven into the substance of the brain. The patient has since been discharged on account of epilepsy, to which he had not been subject before.

Name of Patient.	Date of Injury.	Nature of Injuries.	Adm. to Hospt'l.	General Treatm't.	Disch'd	Ret'd to Duty.	Died.	Wounding Instrum't.	Direction of Wounds, &c.	Remarks.
CASE No. 11. Chas. Koch, private Co. G, 22d Ill. Infantry.	Nov. 7, 1861.	Flesh wound of thigh, injuring the femur (middle third.)	Nov. 13, '61.	Cold water dressing and poultices.	Aug't. 27, '62.			Minnie ball.	Ball entered right thigh on outer side and middle 3d, passed under the femur, denuding it of periosteum, and was lost in the muscular substance.	Suppuration very copious but never disagreeable; when rec'd into Hospital the patient's clothes had not been changed or his wound dressed; leg somewhat painful, causing patient to walk lame when discharged.
CASE No. 12. John Morgan, Co. (?)	"	Flesh wound of thigh, lower 3d.	"	Cold water dressing, milk-punch—generous diet, &c.				Musket ball.	Ball entered thigh, on the outer side, 4 in. above the patella, passing between vasti and rectus muscles, emerging from the opposite side, 1 inch above point of entrance.	Suppuration very great; cure perfect.
CASE No. 13. E. M. McCarty, ord. serg. Co. C, 22d. Ill. Inf'ty.	"	Flesh wounds of both thighs,	"	Cold water and arnica dressing.		Furlo'. Jan. 22, '62.		Musket ball.	Ball entered the outer side of right thigh, 4 in. below perineum, passing through both thighs, behind femur.	Suppuration very extensive; both wounds nearly healed, Jan. 22, '62; returned to reg't. as 2d lieutenant, but was obliged to resign, on acc't of weakness of both limbs.
CASE No. 14. Wm. Miller, (?)		upper 3d. Flesh wound in the back.	"	"				Rifle ball.	Ball entered a little external to the middle portion of the axillary border of scapula, passing through the teres major, downwards & across, through the trapezius, and was extracted near the 1st lumber vertebra.	Great suppuration; recovery perfect.
CASE No. 15. Charles Wilbert, priv. Co. B, 7th Iowa Infantry.	"	Flesh wound of the thigh. upper 3d.	"	"		Jan'y. 22, '62.		Minnie ball.	Ball entered the thigh opposite the trochanter major, passed down the side of femur, and was lost in the muscular substance.	Suppuration extensive.
CASE No. 16. Mathias O'Blennis, Co. E, 7th Iowa Infantry.	"	Flesh wounds of nates, making 4 holes.	"	"	Feb'y. 15, '62.			Ball.	Ball passed through the nates, from right to left.	Speedy convalescence; cure perfect.

Case No. 17. L. Van Hoosen, priv. Co. D, 7th Iowa Infantry.	"	Flesh wounds of both thighs; upper 3d	"	Cold water and arnica dressing.		Jan'ry 1, '62.			Ball passed in a direct line through both thighs at the lower end of upper third, posterior to the femur.	Cure perfect, save a slight contraction of the flexor muscles of both legs.
Case No. 18. Wm. Eshmell.	"	Flesh wound of foot.	"	"					Ball entered near and under the middle of the 1st metatarsal bone of right foot, passing under the deep fascia, and made its exit through lower end of tendo achillis.	Cure perfect.
Case No. 19. Alb't Hite, priv. Co. C, 7th Iowa Infantry.	"	Wound of right lung.	"	Compresses, bandages and cold water dressing, tonics and stimulants.			Nov'r. 24, '61.	Ball. (?)	Ball entered 3 inches below right scapula, grazing the spine, passing through the body, emerging about 3 in. below and to the right of right nipple.	Suppuration very great, pus dark, watery and offensive; air passed through both orifices of wounds when undressed.
Case No. 20. D. Wallis, priv. Co. E, 7th Iowa Infantry.	"	Wound of left lung.	"	Aconite, pulv. Dov. and camphur; generous diet and simple dressings.	Feb'ry 20, '62.			Ball. (?)	Ball entered 1 inch from outer margin of left scapula, passed in thoracic cavity, wounding left lung.	Expectoration of blood during 4 days; completely arrested on the 6th; cure in 7 weeks.
Case No. 21. Wm. L. Wood, priv. Co. H, 7th Iowa Infantry.	"	Wound of right lung.	"				Dec'r. 1, '61.	Minnie ball.	Ball passed through the right scapula into the thoracic cavity, through upper lobe of right lung; emerged between 4th and 5th ribs, fracturing the 4th.	Pulse 120; breathing short and quick; expectorations bloody.

Name of Patient.	Date of Injury.	Nature of Injuries.	Adm. to Hospt'l.	General Treatm't.	Disch'd.	Ret'd to Duty.	Died.	Wounding Instrum't.	Direction of Wounds, &c.	Remarks.
CASE No. 22. Chas. Hoffman, priv. Co. K, 7th Ill. Inft'y. (17 years of age.)	At Fort Don'n. Feb'y. 14, '62.	Fracture of tibia and fibula.		Primary & secondary amputation of leg.	March 15, '62.			Musket ball.	Unkown; amputation having been performed on the battle field.	After the 2d operation the appearance of the limb improve daily; recovery perfect.
CASE No. 23. Wm. Casey, Co. K, 1st Mo. Art.	"	Fracture of fibula with destruction of calf of leg.		Bandages, tonics, stimulants. &c.			Feb'y. 28, '62.	Shell.	Shell carried away the greatest part of the calf, and fracturing the fibula by concussion.	Constitutional irritation extreme; patient died of traumatic tetanus.
CASE No. 24. Geo. Smith, seaman, Gunboat Pittsburg.	"	Wound of back.	Feb'y. 21, '62.	Emolient poultice on wounded parts; tonics, stimulents, &c.			March 20, '62.	Piece of iron, st'v-pipe.	Two wounds near posterior margin of axilla extending upwards one inch beneath the skin for about 2 inches.	12 hours after his admission to the hospital the missile was removed; sero-purulent discharges, on admission, and the parts highly tumefied and painful.
CASE No. 25. W. Cool Russel, Co. E, 9th Ill. Inft'y, (aged 17 years.)	"	Fracture of occipital bone.		Trephined, and detached and depressed portions of bone removed.	March			Minnie ball.	Ball struck the occipital bone near its junction with the left parietal, depressing doth plates.	When rec'd in hospital, his pulse was 65; 24 hours after operation breathing was natu'al, recov'y rapid & good.
CASE No. 26. Dennis Bryan, Co. I, 18th Ill. Infantry.	"	Fracture of inferior maxilla'y bone	"	Resect'n of bone from symphysis to the groove for fascial artery; sutures, cold water dressing, &c.	April 28, '62.			"	Ball struck the chin, glancing and following the bone to within one inch of the angle, when it passed out, crushing the entire bone on its way.	Wound healed rapidly; and bones united by cartilage, cure perfect.

CASE No. 27. Charles Mervin, seaman, gun-boat Pittsburg.	"	Fracture of frontal bone, depression of both plates.	Feb'y. 20, '62.	The surgeon of the boat, mistaking it for a flesh wound, treated it as such, with adhesive strips, &c.			Feb. 24 1862.	Shell.	Fragment of shell struck the frontal bone, about 2 inch. above right eye.	Patient wal'd from boat to hosp. on the 20th; felt well until the 24th when he commenced vomiting, became delirious; had a stertous breathing, dialated pupils, &c.; died 2 hours after attack. *Post mortem* examination: fract're of frontal bone depression of both plate, spicula of bone in the substance brain, both outside the dura-mater; brain disorganized and softened.
CASE No. 28. Wm. Randolphe, Co. C, 25th Ind. Infantry.	Feb'y. 15, '62.	Fracture of femur, middle 3d	"	Amputation primary & secondary, flap operation.			Feb. 24 1862.		Unknown; the patient's limbs having been amputated on the field.	After coming in hosp. flaps retracted, sutures sloughed, expos'g 1 in. of the bone, at the end of which an osseous formation was found; the exposed portion of bone was resected and the flaps drawn togeh'r Excessive inflammatory action 4 weeks after 1st extraction, when the second portion of the ball was removed; after this the wound healed rapidly.
CASE No. 29. J. Strickland, Co. D, 8th Ark. (rebel.)	"	Fracture of superior maxil'ry bone		Extraction of ball in two hal's at an interval of 4 w'ks. The 1st was extrac'd by incision fr'm the posterior margin of the sterno - cleido muscle, and the 2d from the face to the point of entrance of the ball.	March 6, 1862 sent to Camp Douglas, Chicago.			Musket ball.	Ball entered the face about 1 inch below the right eye, fracturing supr. maxillary bone and driving a spicula of bone in the antrum of highmore, then deflecting it passed under the skin and cellular tissue over the angle of the jaw through the sterno cleide muscle, 3 inches below the mastoid process.	

Name of Patient.	Dute of Injury.	Nature of Injuries.	Adm. to Hospt'l.	General Treatm't.	Disch'd.	Ret'd to Duty.	Died.	Wounding Instrum't.	Direction of Wounds, &c.	Remarks.
CASE No. 30. Michael Kelley, seaman, Gunboat Louisville	Feb'y. 16, '62.	Flesh wound of shoulder & back.	Feb'y. 21, '62.	Adhesive strips, cold calendula dressing, tonics, stimulants and rich diet.		July 4, 1862.		Fragm't. of shell.	Wound extending from the middle of deltoid muscle, backwards & downwards to a point opposite the 2d dorsal vertebra.	Wound about 10 inches in length, gaping from 1 to 4 inches, laying bare left scapula and ribs, along the track. When wounded he was unaware of having received any serious injury; had to be ordered to retire. Inflammation, œdema and suppuration extensive.—Cure perfect.
CASE No. 31. Julius Schusker, 48th Ill. Inft'y.	"	Comminuted fr. of radius and ulna, tra'matic tetanus.	"	Spicula of bones removed and limb dressed.—Chloroformed to overcome the rigidity of muscles, more or less for 48 hours	March 7, '62.			Minnie ball.		When admit'd wounds looked well, the bones having been properly adjusted, & the patient's appetite was good. On the 24th, tetanus supervened, being ushered in by fever, closure of jaws and partial immobility of limbs and trunk, with difficult deglutition. Doing well 2 weeks after the attack when he was furlo'ed.
CASE No. 32. Geo. W. Morgan, seaman, Gunboat Carondolet.	"	Flesh wound of back and tra'matic tetanus.	"	Wound dressed as usual. Chloroformed at intervals from ½ to 1 hour during 4 days.			March 9, '62.	Fragm't. of shell.	Entered at the point of the scapula, passing upwards between this bone and the cellular tissue, making a wound three inches in length.	Doing well for 8 days, when a small piece of cloth was extracted from the wound; 4 days thereafter tetanus supervened, which continued for four days, when the patient died from exhaustion.

Case No. 33. Stephen Burrows, 20th Ill. Infantry.	Battle of Ft. Donelson. Feb'y. 15, '62.	Fracture of femur (?) followed by traum'tic tetanus.	"	Dressings as usual. *Blister over the whole length of spine. Strychnia, opium, & camphor.			Mar. 2, 1862.	(?)	(?)	Doing well until Feb. 30, when all the symptoms of tetanus supervenes, and the patient died 28 hours after the attack. The remedies employed could not arrest the progress of the disease.
Case No. 34. R. N. Fowler, Co. A, 31st Ill. Infantry.	"	Fracture of tibia, traum'tic tetanus.	"	Dressings as usual. *Chloroformed more or less for 36 h'rs.	Sent home on a furlo'.			Minnie ball.	Enter'd the leg, fracturing slightly the tibia, and glanced out, doing very little injury to the soft parts.	Doing well until Feb. 29th, when symptoms of tetanus came on gradually, increase in violence. Cure perfect.
Case No. 35. G. Arnold, capt. Co. H, 24th Ohio Vols.	Battle Pittsburg Landing. Apr. 7, 1862.	Woundof scapula andneck sec'dary hemorrhage.	(?)	Simple dressing and generous diet.		(?)		Minnie ball.	Ball entered left scapula at a point opposite the third dorsal vertebra, passed obliquely upwards, lodging in inner margin of the right sterno-cleido muscle, about 1 in. below pomum adami.	Supporation great at point of entrance, white wound at the point of exit, healed by first intention. Expectoration a little bloody at first and difficulty of deglutition. Doing well April 20th. Cure perfect.
Case No. 36. Colby Shrader, Co. I, 17th Kentucky Infant'y.	"	Woundof shoulder andneck		Simple dressings; tonics, stimulants, &c. Unsuccessful attempt by Prof. Gross to tie artery, subclavian.			April 18, '62.	Minnie ball.	Ball entered deltoid muscle, about 3 in. above its insertion into humerus, passed upwards, striking inner head of that bone. then glancing inwards & backwards bet. pectoralis major and minor muscles; passed between clavicle and first rib, over track of subclavian vein, making its exit on opposite side, between scalenus anticus and rectus capitis anticus major, wounding probably the subclavian artery in its passage.	Ten days after the wound was received secondary hemorrhage occurred sufficient to lead to the belief that it proceeded from the subclavian artery. An unsuccessful attempt at tying the artery was made by Professor Gross, who was at that time visiting the Hospital. A sack filled with a coagulum fully the size of a hen's egg was found resting on the pluera.

* These treatme'ts of course, were commencedwhen the symptoms of tetanus were developed.

Name of Patient.	Date of Injury.	Nature of Injuries.	Adm. to Hospt'l.	General Treatm't.	Disch'd.	Ret'd to Duty.	Died.	Wounding Instrum't.	Direction of Wounds, &c.	Remarks.
CASE No. 37. William Merlin, private Co. A, 41st Ill. Inft'y.	April 7,1862.	Woundof of right lung.		Simple dressings; aconite, camphor, and Dover's powd'r, with perf't rest.	May 7, 1862.			Minnie ball	Ball entered chest bet. 2d and 3d rib, about 1 in. to right of sternum, passed obliquely through upper lobe of right lung, then thro' pectoralis major & minor muscles, striking & fissuring the humerus; it made its exit about 1 in. above insertion of deltoid muscle.	Bloody expectoration for the first four days. Result—entire convalescence.
CASE No. 38. T. H. Simmons, leut. Co. F, 14th Ill. Inft'y.	"	Woundof the right lung and scapula.	(?)	Simple dressings; perfect rest.	May 8, 1862.			Minnie ball.	Ball passed between 2d and 3d ribs, 2 inch. to the right of sternum, through the upper lobe of right lung and thro' the scapula.	Bloody expectoration for first 8 days after receiving injury; constitutional irritation slight; pulse 100. 11th day, pulse 80, appetite good, and symptoms favorable. May 8th, wounds closed by granulation; no pain in the chest; draws full inspirations.
CASE No. 39. A. A. Veach, private Co. I, 28th Ill. Inft'y.	April 6, '62.	Woundof left lung	(?)	"			April 19, '62.	Ball (?)	Ball entered the fourth intercostal space, 4 in. left to sternum, and emerged between 8th and 9th ribs, about 3 inches to the right of the vertebral column.	Patient, when wounded, was inclined forwards. Lung highly inflamed; respiration difficult; expectoration bloody. Bloody serum discharge from wound for 3 days, after which an exceedingly offensive, very profuse, dark-colored, thin, excoriating, purulent discharge took place. Appetite remained good throughout, and bowels were inclined to be constipated.

Case No. 40. G. W. Crabtree, private Co. C, 11th Ill. Inft'y.	Apr. 7, 1862.	Wound of descending col'n.	(?)	Upright position, cold water dressings and saline cathartics.		June 27, '62.			Ball entered the abdomen, 3 inch. to the left of the umbilicus, passed through the body, emerging about 1 inch. to the left of the spine.	Fecal discharge from both wounds until May 2d, when the wounds healed and the bowels acted regularly; when the bowels were constipated the discharge from the wounds was profuse & attended with much pain; when the bowels were relaxed discharge was slight and the patient comfortable; cure perfect.
Case No. 41. G. W. Spalding, private Co. D, 52d Ill. Inft'y.	"	Fracture of right clavicle.		Exsection of the sternal half; arnica water dressing, stimulant, generous diet, and anodynes at bedtime.			May 7, 1862.	Minnie ball.	Ball struck the centre of right clavicle, shattering the bone, and became embedded under the clavicle near its sternal end.	April 19th, several spiculæ of bone, about $\frac{1}{2}$ of an oz. ball, and several small pieces of clothing were removed from the wound. 22d, general condit'n good, pulse 90; exsection performed by Surgeon Franklin; operation lasted 20 minutes, with a loss of less than 1 oz. of blood; a brass button belonging to the coat of the patient was found embedded under the bone, near the acromion process, and removed.
Case No. 42. Adam Sheldon, private Co. A, 43d Ill. Inft'y.	"	Wound of knee-j't.		Cold water dressings and bandages after inflammation was reduced; tonics, stimulants, and generous diet.	July,				Ball passed through the patella, into the joint, where it could not be found.	Suppuration excessive; abscesses formed around the knee-joint; inflammation and swelling extending up to the thigh and down to the foot; cured with anchylosis of the knee-joint.

Name of Patient.	Date of Injury.	Nature of Injuries.	Adm. to Hosptl.	General Treatm't.	Disch'd.	Ret'd to Duty.	Died.	Wounding Instrum't.	Direction of Wounds, &c.	Remarks.
CASE No. 43. Edw. Hawkins, private Co. F, 52d Ill. Inft'y.	Apr. 7, 1862.	Fracture of femur left, low. third.		Limb adjusted, spicula of bone removed, splint, extension, and cold water dressings.	July, 1863.				Ball entered on outer side and lower third of left thigh, making a cominuted fracture of the femur, emerged on inner side, and passed through left thigh posterior to the femur.	Right leg healed rapidly; bone united on 27th June, (50 days after injury); there seemed however to be some necrosed bone, which kept up continued irritation; remained in hospital over a year, when he was disch'd the service at his request.
CASE No. 44. Saml. M'Combs, private Co. D, 23d Ill. Inft'y.	"	Fracture of tibia and fibula, near the tubercle.		Amputation of the thigh at the lower third.	June, (?)					Six days after injury was received, the wound had become gangrenous, necessitating an amputation. May 15th, symptoms of pyemia made their appearance, but the disease was checked by tonics and stimulants, under the influence of which he slowly recovered; cure perfect.
CASE No. 45. John W. Milton, private Co. E, 14th Iowa Infy.	"	Fracture of knee-joint.		Limb adjusted, splint extension by cord and pulley, cold water dressing, tonics, stimulants, and generous diet.			Sept. 15, '62.			May 1st, patient doing well; 3d, opened an abscess 1½ inch. below patella, discharging considerable quantity of pus; 27th, removed two small pieces of lead from lower part of the patella; bone partially united; June 7th, large suppuration of knee-joint discharging a quanity of pus and a small piece of the lining of the pants; 11th, complete union, all symptoms favorable; 28th, able to walk about; July 2d, diarrhœa followed by symptoms of pyemia, from which date the patient gradually sunk daily until he died.

RESUME.

Nature of Injuries.	Number Total.	Battle of Belmont.	Battle of Pittsburg Landing.	Battle of Fort Donelson.	With Amputation.	Result.			Without Amputation.	Result.		
						Returned to Duty.	Discharged.	Died.		Returned to Duty.	Discharged.	Died.
Fracture of humerus,	2	2	0	0	1	—	1	—	1	1	—	—
" " femur,												
" " upper third,	1	1	0	0	0	0	0		1	1	—	—
" " middle "	2	1	0	1	1	0	0	1	1	—	1	—
" " lower "	2	0	2	0	0	0	0	0	2	0	1	1
Not known,	1	0	0	1	1	0	0	1	0	0	0	0
Fracture of ulna and humerus,	1	1	0	0	0	0	0	0	1	0	1	0
" " ulna and radius,	1	0	0	1	0	0	0	0	1	0	1	0
" " tibia,	1	0	0	1	1	0	1	0	0	0	0	0
" " fibula,	1	0	0	1	0	0	0	0	1	0	0	1
" " tibia and fibula,	2	0	1	1	2	0	2	0	0	0	0	0
" " sup'r. maxillary,	1	0	0	1	0	0	0	0	1	0	1	0
" " inf'r. "	1	0	0	1		0	0				1	
" " occipital bone,	2	1	0	1		0	0	0		1	1	0
" " frontal "	1	0	0	1				0				1
Injury to bones of tarsus,	1	1	0	0							1	
" " periosteum femur,	3	3	0	0	—	—	—	—	3	1	1	1
" " " scapula,	1	1	0	0					1	1		
Fracture of clavicle,	1	0	1	0	1			1				
Wound of knee-joint,	1	0	1	0	—				1		1	
" " right lung,	4	2	2	0							2	2
" " left "	2	1	1	0							1	1
" " desc'g. colon,	1	0	1	0						1	—	—
" " shoulder and neck,	3	0	2	1						2	—	1
" " back,	3	1	0	2						1	0	2
" " nates,	1	1									1	
" " foot,	1	1								1	0	0
" " one thigh,	2	2								2		
" " both thighs,	2	2								2		
	45	21	11	13	7	0	4	3	14	14	14	10

Combining these statistics with those gathered by your Committee from other western battle fields, we obtain the following tabular results:—

Wounds Received in the Western Battles.

	Recov'd.	Died.	Total.
Gunshot Fractures of the Cranium,	3	8	11
" " " Face,	15	2	17
" " " Shoulder-Joint,	4	2	6
" " " Humerus,	30	5	35
" " " Elbow-Joint,	14	3	17
" " " Fore-arm,	20		20
" " " Pelvis,	2		2
" " " Femur,	17	16	33
" " " Knee-Joint,	9	16	25
" " " Leg,	23	9	32
Penetrating Wounds of Thorax,	12	20	32
" " " Abdomen,	4	12	16

Fractures of the Cranium.

Three of these only recovered, and these were merely ploughed by the shot, the bullet not entering the brain. Two of them were trephined for the depression. None of the cases of penetrating wounds were trephined, as the bullet and fragments of bone, hair, and clothing are in such cases driven far within the cerebrum, and cannot be removed by operation.

Fractures of the Face.

There is but little mortality from this accident.

Fractures of Knee-Joint.

The great mortality of this injury is obvious at a glance, being about 66 per cent. Many cases were lost early in the war by the reluctance of surgeons to amputate. The innocent look of a knee-joint, which has been penetrated by a bullet, should, however, never deceive us. The patient will die unless he has operative assistance. We have been able to learn of only two cases which recovered without operation.

Penetrating Gunshot Wounds of the Thorax.

Extremely dangerous, only 12 out 32 recovering.

Penetrating Gunshot Wounds of the Abdomen.

Still more fatal, only 25 per cent. recovering.

Amputations.

The following cases of amputation are on our records:—

	Recov'd.	Died.	Total.
Amputation at shoulder-Joint,	4	2	6
" of the Arm,	14	1	15
" " Forearm,	5		5
" " Thigh, Upper third,	6	4	10
" " " Middle "	4	7	11
" " " Lower "	10	5	15
" " Leg,	21	4	25

Resections.

A considerable number of cases of resections have come under our observation with the following results:—

	Recov'd.	Died.	Total.
Resection of the Shoulder-Joint,	8	2	10
" " Knee "	1		1
" Continuity of the Shaft of Femur,		2	2
" of the Elbow-Joint,	6	1	7

Discussion of the Operations.

It is now well settled that amputations of the superior extremity should only be performed when the limb is obviously going to mortify, from the destruction of its vessels and nervous trunks. Shattered shoulder and elbow-joints should be resected instead of amputated. The mortality of amputation at the shoulder, as above shown, is one in three, while that of resection at the same place is only one in four. In the British wars with Napoleon, 44 cases of amputation at the shoulder are reported, of which 17 died. In the Schleswich-Holstein campaign, 19 resections of the shoulder are reported, of which 7 died. Combining these and our own statistics, we have the following results:—

	Recov'd.	Died.	Total.	Pr ct. of Deaths.
Amputation at the Shoulder,	31	19	50	38
Resection " "	20	9	29	31

Showing an advantage of 7 per cent. in favor of resection.

Amputations of the arm below the shoulder have but little mortality. Of 15 cases only 1 died, and of 72 cases mentioned by GUTHRIE, only 17 died. Combining both, we have a mortality of a little over 20 per cent. The British mortality is obviously excessive, owing to the crowded state of their hospitals in the Crimea and Scutari. If the men are kept in open tents in the field, the mortality of this amputation will not be much above 8 or 10 per cent. Still the arm should not be amputated for a gunshot fracture, unless the circulation is obviously destroyed, as it recovers from the most surprising injuries with ease. In cases of badly shattered elbow-joints, resection should be preferred to amputation. The mortality in our cases of this resection was only 1 in 7. ESMARCH quotes 40 cases, of which 6 died. Combining these, and comparing the result with the amputations of the arm before mentioned, we have the following table:—

	Recov'd.	Died.	Total.	Pr ct. of Deaths.
Resection of the Elbow-Joint,	40	7	47	15
Amputation of Arm,	69	18	87	21

Showing an advantage of 6 per cent in favor of resection of the elbow.

Amputations of the fore-arm present very little danger, but are rarely necessary except for cases where the hand has been torn off. In nearly all bullet wounds the hand may be saved.

The statistics of this war present some anomalies in the matter of amputation of the thigh. Thus, for instance, out of 10 amputations in the upper third, only 4, that is 40 per cent., were fatal, whereas, in military experience heretofore, the mortality of amputations at that locality have been 80 to 90 per cent. In the Crimean war it was 87 per cent. This anomaly in the statistics occurs in consequence of adding in all the high amputations of the thigh in a certain division of troops at the seige of Vicksburg. The wounded in this division were not transported to general hospital, but were treated in the field in open tents, pitched on a high, breezy bluff. The curtains of

the tents being raised, the men breathed a pure untainted air, and made recoveries which would astonish the denizens of crowded brick hospitals. We are informed by surgeon JOHN M. WOODWORTH, of the 1st Illinois Light Artillery, that a similar superiority of success accompanied the field treatment of the wounded near Atlanta. Our own personal experience in the field also points in the same direction. Indeed we are of the opinion that there is seldom any hospital arrangement which gives so favorable results after amputation as retaining the men in the fresh air of the fields. The amputations at the middle third of the thigh contain no Vicksburg statistics, and are made up of men mostly treated in general hospitals. The results, therefore, are less favorable, and actually show a mortality of 64 per cent. The result of our experience is, that the difference in mortality between the results of good field treatment, and those of treatment in average general hospital buildings is nearly as follows:—

Mortality of amputation of the thigh	Treated in Ordinary General Hospital Buildings.	Treated in the Field in Good Circumstances.
At the Upper third,	85 per cent.	45 per cent.
" Middle "	60 "	30 "
" Lower "	30 "	20 "

It is gratiying to observe, however, that many of our military hospitals have been so far improved that they now rival the success of field treatment, and that on the whole our present general hospitals are superior to any that have ever been constructed on so large a scale, in European wars. It is important also to observe that the essence of the improvement, consists in the superior character of modern arrangements for ventilation. In the Mower General Hospital, at Chestnut Hill, Philadelphia, these arrangements are particularly excellent, and the air is freely admitted to the wards, close to the head of each cot, so that every patient enjoys a respiration almost as pure as that of the open fields. The consequence is, as might be expected, out of 6000 patients no case of hospital gangrene has occurred, and only one death has taken place from erysipelas. In short,

hospital gangrene, erysipelas, and pyæmia, the special scourges of hospitals, have been complely disarmed of their terrors.

CIVIL SURGERY.

This department of our science has been making important advances. The improvements in Ophthalmic Surgery will be detailed by the Committee on that subject. In syphilitic literature, we have to note the pretty general acquiescence of the profession, in the opinion that hitherto we have confounded two distinct diseases under the name of syphilis. The Hunterian Chancre instead of being a typical form of either, is the result of a complication of chancre with chancroid. The subject cannot, however, be fully discussed in this report. The best elucidation of the subject, in English, is at present found in BUMSTEAD on Venereal; last edition. We dissent, however, from some of his conclusions on the treatment of syphilis.

Diseases of the Articulations.

There has been within the past few years, a general advance of the art of treating joint and spinal diseases.

There are three great principles which run through this whole branch of surgery, like lines of light, which, when fully comprehended, reduce its apparent obscurity to clearness and order. These principles are as follows:—

1st. Simple chronic inflammation of the joints and spine have a tendancy to spontaneous recovery, but this tendency is overcome by the irritating influence of the pressure and friction of the parts upon each other, by which the inflammation is exasperated and forced on to the destructive results of suppuration and caries. Hence a vast proportion of the spinal, hip, and knee diseases are readily cured, by any good extending apparatus which draws sufficiently to take off all the pressure and friction of the inflamed parts.

2d. The plastic diathesis, when strongly present, has an almost unlimited power to prevent suppuration and caries; while the supervention on the other hand of the aplastic diathesis, will often bring a joint to these destructive results in a very few days. Now, as modern science has placed these diathesis

very much within our control, we put off the suppurative stage, and gain unlimited time and opportunity for the cure of joints, by maintaining a decidedly plastic condition in our patients.

3d. All tissues, bone included, yield and change their form under continuous mechanical pressure or tension. Hence not only club-feet, but bow-legs, bent-knees, flexed-hips, and curved-spines, as well as almost all other deformities of position, will yield to mechanical force steadily applied, and very many cases which were formerly reckoned hopeless, are perfectly curable. On these three simple principles hang almost all the resources of modern orthopedy.

The subject of fractures has received, of late, increased attention among Western surgeons. Dr. PRINCE, of Jacksonville, Illinois, Dr. LATTA, of Goshen, Indiana, Dr. DODGE, of Janesville, Wisconsin, and others, in various locations, have developed improved appliances of value. Perhaps the most practically useful of them are those which have been devised to secure painless counter-extension in fractures of the inferior extremity. This is now accomplished successfully in three principle modes:—

1st. By the single inclined plane. A simple board or fracture-box being placed under the fractured limb, and sloping upward from the nates to the foot-board of the bed, is the principal apparatus. Adhesive straps are attached to the leg and fasten to a cord which runs over a pulley in the end of the board with a weight attached; this makes the extension. The weight of the body is the counter-extension. The same counter-extension can be made on the bed alone, by simply raising the foot of it ten or twelve inches, and placing the pully in the foot-board.

Probably for general use this is the best of all methods. Two other plans, however, may be resorted to. One is to have a long splint and a steel bow at the top reaching above the shoulder, which is attached to large adhesive straps, running down the breast and back. The other way is to make use of pressure against the ischium of the sound hip, as a *point d'appui* for counter-extension, as in a very ingenious apparatus devised by Dr. LATTA, of Goshen, Indiana.

The treatment of indolent ulcerations has apparently received an impetus from a suggestion of Dr. LUCIUS CLARK, of Rockford. The plan consists of simply giving the patient large and frequent doses of sulphur, internally, until the system is saturated with it. As tested by Prof. ANDREWS, at Mercy Hospital, in Chicago, the effect of the drug would seem to be to stimulate very powerfully the growth of granulations. One case took 30 grains at a dose, five times a day. In five days a luxuriant crop of granulations was produced in an indolent old ulcer of two years' standing. In ten days the ulcer was full and partly healed. In a few days more the cicatrization was complete. The granulations had a much redder color than usual, but did not present any other evidence of inflammation. If sulphur shall prove to have a reliable power of increasing the growth of granulations, it will be a most valuable agent. At present only about ten cases have been experimented upon. The success is such as to encourage further trial, but from so limited an experience, we do not feel willing to pronounce a final opinion upon the subject. It should be remarked that many cases require opiates with the sulphur, in order to restrain the purgative action.

The subject of the exsection of portions of nerves, for old and otherwise incurable neuralgias of aggravated character, has received some recent attention in this State. Some cases of ten years standing have been treated in Mercy Hospital with success. In one case the myloid branch of the inferior dental nerve, which has been commonly supposed to be a motor nerve, was the seat of trouble, and the removal of half an inch of it effected a cure, showing that it has, at least in part, a sensory function. In all such operations it is important to remember that the cause of the neuralgia is situated, not where the pain is felt, but in some foramen, canal, or notch through which the nerve passes, and in which the trunk of it is compressed by organic changes. The nerve, therefore, must be cut on the *proximal* side of such constrictions. For instance, the inferior dental must be cut by trephining the ramus of the jaw, and reaching it before it enters the bone. The direction of GROSS

to cut such nerves just at their exit from their foramina, is not only absurd, but is proved by experience to be utterly inefficient. It is only in a few terrible, and unusual cases of neuralgia, that the resections should be practiced.

E. ANDREWS, M.D.,
S. W. NOBLE, M.D.,
F. B. HALLER, M.D.,
Committee on Surgery.

The Clinique.

MEDICAL WARDS OF THE MERCY HOSPITAL.

CHRONIC DIARRHŒA —— CAMP DIARRHŒA, &c.

By N. S. DAVIS, M.D., Prof. of Practical and Clinical Medicine.

Case I. This man, aged about 35 years, has recently returned from the army in the South. He was admitted into the hospital yesterday. I learn that he has had diarrhœa constantly for the last six or eight months. You see his skin is dark color, exceedingly rough and dry; he is greatly emaciated; countenance haggard; lips thin, pale, and dry; tongue and gums pale, but clean, and inclined to dryness; little or no appetite; abdominal walls sunken, but not tender; intestinal discharges frequent, generally large in quantity, thin, and of a pale yellow or ash-gray color, and accompanied by very little pain, though sometimes they have been small in quantity, mixed with mucus and tinged with blood. His urinary secretion is scanty, nearly natural in color when voided, but becomes turbid with phosphatic salts on standing. The feet and ankles are œdematous, especially when allowed to remain in a dependent position. His pulse is small, feeble, and about 100 per minute.

Case II. Turning to the next bed we find another patient, also from the army. He was brought into the hospital, two days since, in a state of extreme exhaustion. His expression

of face is strongly hippocratic; his tongue and gums are less pale than in the first case, but look dry, tender, and present some points of apthous ulceration. The skin is even more rough and dry than in the other case; the pulse is very feeble and quick; the extremities cool and extremely emaciated. His pulse is small, feeble, and frequent. He has had diarrhœa, sometimes assuming the character of dysintery, for several months. His discharges are at present dark colored, thin, and tinged with blood, and are sometimes passed involuntarily.

Case III. This man, aged about 30 years, has also been in the South during the past two years. He has not, however, the extreme emaciation or haggard countenance presented by the other two. His whole cutaneous surface is white or bloodless, while the lips, tongue and gums are remarkably pale. His skin is cool; pulse soft and only slightly increased in frequency; tongue clean, and appetite fair, though digestion is often accompanied by flatulency. He has been affected with a moderate chronic diarrhœa during the last four months. The discharges have been thin and copious, but usually not more than four or five in the twenty-four hours. Though able to be up, he is quickly exhausted by muscular exercise.

The three foregoing cases illustrate different varieties and stages of a disease that has destroyed the lives of a far larger number of our soldiers than all the armed rebels of the South. The change of diet, habits, and climate involved in the sudden transition from civil life in the North to the military camps in the South, causes a great prevalence of diarrhœa and dysentery, and many of the cases are protracted in a chronic form. From such of the latter as have come under my observation, I think the symptoms justify their arrangement into two classes. One embraces such cases as are characterized by some pain and soreness in the abdomen; a very dry, harsh skin; rapid emaciation; increased frequency of pulse; and frequent intestinal discharges, generally thin, redish yellow or dark brown, containing some mucus, and sometimes tinged with blood. The other class embraces such cases as present little pain or tenderness in the abdomen; little emaciation; a pulse nearly natural

in frequency; and instead of a rough and dry skin, the whole cutaneous surface appears bloodless, with paleness of the lips and often a sallow hue of the face. The intestinal discharges are copious, very thin, and generally of a pale yellow or gray, ish color, and seldom contain any appearance of mucus. The third patient now before the class, is a fair sample of this variety of cases; while the first and second are specimens of the other class in an extreme stage of advancement. In the first class of cases there is evidently an inflammatory condition of the mucous membrane of the ilium or colon, or both. The altered properties of the membrane, and the accumulation of blood in it, constituting such inflammatory condition, is, not only productive of morbid secretion, as seen in the frequent and unnatural evacuations, but also of infiltration into the sub-mucous tissue, causing tumefaction and subsequently induration with abrasions and ulcerations upon the surface. In the second class of cases there is much less evidence of inflammatory action, the special pathological condition of the mucous membrane being that of extreme irritability, coupled with such a pervertion of function in the capillaries, as to cause an almost constant effusion of fluids instead of absorption. This extreme sensitiveness sometimes extends throughout the whole alimentary canal, and even into the lining of the hepatic ducts. In such cases whatever food or drink is taken, is speedily followed by such excessive peristaltic movements that a large part of it is hurried through the intestines without digestion or absorption. Consequently the patient becomes rapidly anemic; weak; countenance sallow or of a waxy paleness; and the watery element of the blood so much in excess as to cause œdematous infiltrations into the feet and ankles, or whatever part may remain most dependent. In the treatment of this class of cases of chronic diarrhœa there are three plain indications to be fulfilled, namely: to allay the morbid sensibility of the mucous membrane and thereby quiet the excessive peristaltic movements; to correct the perverted action of the capillaries; and to restore a more efficient digestion and nutrition.

The first of these requires the use of anodynes, especially the

preparations of opium; the second calls for the use of a class of remedies, the specific action of which is not easily described, but which are well known to the profession; such as nitrate of silver, sub-nitrate of bismuth, oil of turpentine, &c.; while the third is to be acccomplished chiefly by dietetic and hygienic regulations, sometimes aided by the preparations of iron. In the third case to which your attention has been called, we have endeavored to fulfil the several indications by giving the patient a powder of sub-nit. bismuth 10 grs., sulph. morph. $\frac{1}{3}$ of gr. every six hours, and three grains per. sulph. of iron in solution, between; while his diet has been chiefly boiled milk, slightly thickened with wheat flour.

He has already taken these remedies steadily for five or six days, resulting in so decided an improvement, that we shall continue it unchanged.*

For the treatment of the first class of cases, to which the first two patients belonged, we have the same indications with the addition of a fourth, namely: to use some alterative capable of inducing the re-absorption of those semiplastic infiltration or deposits which have caused the thickened and indurated condition of the affected portions of the mucous membrane. Here is one of the greatest difficulties in the treatment of this class of cases when they have become thoroughly chronic. The practitioner finds every new combination of anodynes and astringents that he may make, to relieve the patient *temporarily* only. The mercurials cannot be relied on for the desired alterative effect, because they increase the evacuations on the one hand, and diminish the plasticity of the already impoverished blood, on the other. While on a professional visit, recently, at the prisoners' camp on Rock Island, I was kindly shown through the hospitals by Drs. WATSON, GLEASON, and GILBERT.

* The two last mentioned cases both terminated fatally; one in forty-eight hours after its admission to the hospital, and the other in about five days. The third case, which in the above clinic was described as being treated on full doses of sub-nitrate of bismuth and sulphate morphine, alternated with per. sulphate of iron, was continued on the same treatment, only gradually lessening the quantity of morphine, for about three weeks, during which he fully recovered, and was discharged from the hospital.

Among them I found one devoted to diseases of the bowels, under the care of Dr. GILBERT, in which he had treated a considerable number of cases, both of diarrhœa and dysentery, with bromine held in solution by the aid of bromide of potassa, as the only remedy. Encouraged by his success, and hoping that the bromine might prove to be the alterative long needed in these cases, I commenced using it immediately on my return home. Thus far its effects have fully answered my expectations. The formulæ which I have used for adults is as follows:—

℞.—Bromine, ---------- 16 gtts.
Bromide Potassa, ---------- 20 grs.
Water, ---------- ℥iv.

Mix, give a tea spoonful every 3 or 4 hours.

Although the two first cases to which I have called your attention, are already hopelessly exhausted, we will give them of this formulæ, a teaspoonful every two hours, and a powder of sub-nitrate of bismuth and morphine, each night and morning. We will also try to sustain the failing powers of life by milk-porridge and moderate doses of brandy and milk.

Their progress you will be able to determine in subsequent visits to the hospital wards.

Proceedings of Societies.

FOX RIVER VALLEY MEDICAL ASSOCIATION.

Pursuant to the call issued by the Aurora Medical Association, the Physicians of Aurora and vicinity assembled in the Common Council room, in the city of Aurora, on Thursday afternoon, Sept. 1st, 1864, and, on motion of Dr. Higgins, of Aurora, Dr. Joseph Teft, of Elgin, was called to the Chair, and Dr. D. W. Young, of Aurora, chosen Secretary.

Dr. Young stated the object of the meeting.

Dr. Winchester, of Elgin, moved that the meeting proceed to organize a District Medical Association.

On motion of Dr. Allaire, the Secretary read the following Constitution, which he had drawn up to present to the meeting.

1st. This Association shall be known and distinguished by the name of Fox River Valley Medical Association.

2d. The members of this Association shall collectively represent and have cognizance of the common interests of the Medical Profession in the Fox River Valley; and shall hold their membership by election or invitation.

3d. Any regular practitioner of medicine in good standing in the profession, who holds a diploma granted him by a regularly authorized Medical College, of *legitimate* medicine, or any under graduate, of good moral character, may become a candidate for membership; and if three-fourths of all the members present, at any regular meeting of the Association, vote in his favor, then he shall become a member by signing the Constitution and By-Laws.

4th. Members by invitation shall consist of regular practitioners of medicine of reputable standing in the profession, from any part of the United States. They shall receive an invitation from the Association after an introduction from the member presenting them. They shall hold their connection with the Association until the close of the session at which they are invited, and may participate in the discussions, without the right of voting.

5th. The regular meetings of this Association shall be held on the first Monday of January, April, July, and October of each year. The place of meeting shall be determined for each next succeeding meeting by vote of the Association.

6th. The officers of this Association shall consist of a President, Vice-President, Secretary, Treasurer, and an Executive Committee of three, who shall be elected by ballot, and hold their office for one year, and until their successors are elected.

7th. The President shall preside at the meetings of the Association, preserve order and decorum in debate, give a casting vote when necessary, and perform all such other duties as custom and parliamentary usages may require, and *deliver a good written address* at the expiration of his term of office.

8th. The Vice-President shall assist the President in the performance of his duties, and during the absence, or at the request of the President, shall officiate in his place.

9th. The Secretary shall record the minutes and authenticate the proceedings, conduct the correspondence of the Association, and perform such other duties as the Association may from time to time require.

10th. The Treasurer shall have the immediate charge and management of the funds and property of the Association. He shall report the state of the finances whenever called upon by the Association, and give a full report in writing at the close of his term of office.

11th. The Executive Committee shall also be the Committee on Finance, Credentials, and Printing.

On motion of Dr. Burdick, of Elgin, the above was adopted as the Constitution of this Association.

Dr. Young moved that the gentlemen present now be requested to come forward, sign the Constitution, and become members of this Association.

The following gentlemen then signed the Constitution, and duly become members:—

P. A. Allaire, Aurora,	Illinois.	O. I. Corbin, Plainfield,	Illinois.
F. Bartels, Elgin,	"	F. N. Burdick, Elgin,	"
J. Nicoloy, Plainfield,	"	E. J. Morse, Naperville,	"
S. F. Hance, Aurora,	"	Joseph Teft, Elgin,	"
O. D. Howell, Aurora,	"	S. O. Long, Big Rock,	"
S. C. Gillett, Aurora,	"	N. F. Eddy, Geneva,	"
E. Winchester, Elgin,	"	Wm. LeBaron, Geneva,	"
L. H. Angell, Aurora,	"	L. A. Winslow, Aurora,	"
D. S. Jenks, Plano,	"	George Higgins, Aurora,	"
C. Cushing, Warrenville,	"	D. W. Young, Aurora,	"

The Secretary, Dr. Young, then read the following By-Laws of the Aurora City Medical Association:—

The order of business at the regular meetings of this Association shall, at all times, be subject to the vote of three-fourths of all the members in attendance; and until permanently altered, except when for a time suspended, it shall be as follows:—

1. Calling the meeting to order.
2. Calling the roll of officers.
3. Reading the minutes of last meeting.
4. Reception of members by invitation.
5. Proposals for membership.
6. Unfinished business.
7. New business.
8. Reading and dicussing voluntary communications.
9. Correspondence.
10. Selection of next place of meeting.
11. Adjournment.

Members of this Association shall be liable to censure, suspension, repremanding, or expulsion for wilful neglect, or disregard of the rules and regulations of this Association, or violation of our code of professional ethics. A vote of two-thirds of the members present shall be required to censure or suspend, and one of three-fourths to expel.

In case of any charges being preferred against any member, which might lead to his censure, suspension, or expulsion, the Association shall immediately give to the accused a written copy of the charges preferred. The matter shall then lie over till the next regular meeting, when due action shall be taken thereon.

Five members shall constitute a quorum; a less number may adjourn.

On motion of Dr. Young, the Code of Medical Ethics adopted by the American Medical Association were adopted for the government of this Association.

On motion of Dr. Howell, the above By-Laws were adopted as the By-Laws of this Association.

On motion of Dr. Winslow, the Association then proceeded to the election of officers for the ensuing year.

On motion of Dr. Allaire, Dr. S. F. Hance, of Aurora, and Dr. S. O. Long, of Big Rock, were appointed tellers.

The balloting resulted as follows:—

President, Joseph Tefft, M.D., of Elgin.

Vice-President, P. A. Allaire, M.D., of Aurora.

Secretary, D. W. Young, M.D., of Aurora.

Treasurer, Wm. LeBaron, M.D., of Geneva.

Executive Committee, O. I. Corbin, M.D., of Plainfield; O. D. Howell, M.D., of Aurora, and S. O. Long, M.D., of Big Rock.

On motion of Dr. L. H. Angell, the above were declared duly elected as the officers of this Association for the ensuing year.

Dr. Winchester, of Elgin, suggested that the Association ought to adopt a fee bill, so that we would have a uniform rate of charges throughout the entire district.

By request the Secretary read a portion of the fee bill adopted by the Aurora City Medical Association in April, 1857.

It was the unanimous opinion of the meeting that, in consequence of the increased price of all kinds of drugs and medicines, and the increased expenses of living, these rates are *too low* for these times.

Dr. Allaire moved that the rates be increased to two dollars per visit in the cities, for day visits.

Dr. Winchester moved to amend by inserting $1.50 instead of $2. Amendment prevailed, and the following rates were agreed upon.

For each visit and medicine in city, during the day time, $1.50; for each visit and medicine in the city, in the night, $2.50.

Country Business.—One mile, $1.50; thereafter add 50 cents per mile for day time; nights add 25 per cent.

For each obstetric case in city, $7.50; in country add traveling fee 50 cents per mile after the first mile.

For examination and medicine at house or office, from $1.00 to 10.00.

On motion of Dr. Winchester, of Elgin, Drs. Young, Allaire, and Winslow, of Aurora, were appointed a Committee to revise the balance of the fee bill.

On motion of Dr. Allaire, the Association adjourned, to meet at the Common Council Room, at Aurora, on the first Monday of October, next, at one o'clock P.M.

JOSEPH TEFFT, M.D., *President.*

D. W. Young, M.D., *Secretary.*

Selections.

PATHOLOGY AND TREATMENT OF ASTHMA.

By HYDE SALTER, M.D., F.R.S., F.R.C.P.,
Lecturer on Physiology and Pathology at the Charing-Cross Hospital Medical School, and Assistant-Physician to the Hospital.

II. ON THE TREATMENT OF ASTHMA BY THE IODIDE OF POTASSIUM.

This is a remedy that, in the opinion of many competent men, holds a high place in the treatment of asthma. Dr. Williams evidently thinks highly of it. I see many asthmatic patients who have been under the care of that eminent and able physician, and I find that for almost all of them he has ordered iodide of potassium. I remember some years ago receiving a long and interesting letter from my friend Dr. Oke, of Southampton, begging me to try it, and assuring me that he found it an almost unfailing remedy, and had seen it succeed in the most obstinate cases; indeed, he regarded it in the light of a specific. In many other and equally respectable directions I have heard its praises as loudly sounded.

But I must say that, according to my own experience, it does not deserve so high a place as has been given it. I find it entirely fail in a great many cases, while those in which its success is complete are comparatively few. I do not believe that in one case in five it of sufficient permanent advantage to be worth persevering in. Still, one case in five would be a great deal in such a disease as asthma; a disease so painful, and often so intractable; and I should not think it right to omit its trial in any case in which it had not been fairly tried. How to explain the lower estimate I have formed of its value than others have I cannot tell; but the very frequency with which I see it in the prescriptions of other physicians tells, I think, against it; for if it had done any material good—it had been a success—why should the patients come to me, and not rather continue under the care of those at whose hands they were receiving benefit? The frequency with which it is found in prescriptions for asthma represents, I think, the general opinion that is entertained on the part of those who prescribe it, rather than its utility to those who take it.

Sometimes, however, I have seen most striking results attend its use, as the following cases will show:—

E. H——, a lady aged thirty, who had suffered from asthma for seven years past, came under my care in September, 1863. Her paroxisms were of two kinds—very severe ones, lasting several days, at long intervals; and slight ones, occurring every night, and disturbing her sleep for an hour or two. From these last she had been suffering every night for some weeks when I saw her. Omitting many of the details of her case, I may mention the following as the most relevant:—Diet appears to exercise no influence on her attacks. Damp places agree with her the worst, and she is never well for the first day or two on going to a new place. She is liable to what she calls attacks of renal congestion, in which the urine is very thick and high-colored, and she thinks that this state of the urine is associated with and produces the asthma. Her father is a martyr to rheumatic gout, quite crippled by it, and has been for years; an uncle died of gout quite young. She has tried an infinity of medicines, and, as far as their effect go, they may be divided into two classes; those which give her slight relief, and those which give her no relief at all. Among the former are, inhaling chloroform, smoking stramonium, smoking various forms of cigarettes, burning nitre paper and inhaling the fumes, ipecacuanha as an emetic, mustard plasters, blisters, chloric ether in thirty-minim doses. Among the latter are, strychnine and nux vomica, valerian, lobelia, hot strong coffee, sulphuric ether, Indian hemp. The benefit derived from inhaling chloroform, fumes of nitre paper, from ipecacuanha as an emetic, and from chloric ether, is great at the time, for the smaller attacks, but in each case evanescent.

When I first saw this lady, she was staying at Chertsey, and having the miner attacks every night. I prescribed for her extract of stramonium, and one or two remedies which she had not tried. She called on me again about the 5th of October, and informed me that what I had prescribed for her did not seem to have affected her in any way; she still had the slight attacks every night. She was going away in three days to a place in Surrey, where she had always been bad and had had some of her most violent attacks; indeed, she had never been there without being violently asthmatic the whole time, and she looked forward to her visit with great apprehension. The house to which she was going was built, as she described it, almost in a well—in a place surrounded with water on all sides, and which was rather *wet* and *damp*. I ordered her five grains of iodide of potassium and twenty minims of aromatic spirit of ammonia, in a wineglass of water, three times a day. I saw her husband

on the 22d of October, seventeen days afterwards, and his report was as follows:—She had begun the iodide of potassium a day or two after I had ordered it, and had not had an attack of any kind, severe or light, since. The minor attacks had entirely ceased, and she slept uninterruptedly through the night, a thing she had not done for two or three months: she had gone to the dreaded place, and no attack had occurred—the first time in her life that that had ever happened. Her husband did not know when he had seen her so well. She was daily gaining flesh and strength. The lady herself, with great simplicity, gave the strongest possible testimony to the effect of the remedy by saying, in her written account of herself, that "she had been so well since she had been taking it that she had had no opportunity of trying what its effects would be upon her asthma." To which of course I replied, that I did not care how long the same result should keep her ignorant of the virtues of the remedy.

It is now nearly a month since she has been taking the iodide, and she still remains perfectly free from her former symptoms. Occurring, as the change did, suddenly, and coincidently with the taking of the medicine, and under the most unfavorable circumstances—that is, when she was going to a place where she had never before escaped severe asthma as long as she was in it, I cannot but attribute the result to the remedy. What will be the effect of leaving it off, and whether on future occasions its results will be equally striking, the future only will show.*

The following case, in which the iodide appeared to be equally beneficial, was under my care during the past autumn:—

T. H——, a tall, pallid, spare man, aged sixty-two, had had asthma for six years, and for the last three the attacks had been frequent and very severe. He generally had an attack once a week, and if he escaped a fortnight thought himself very lucky. When I first saw him he had had for some time slight attacks every morning, about four o'clock, that woke him from sleep, and compelled him to sit up and cough and wheeze for an hour. There was no history of gout in the case: but there was clear evidence of occasional attacks of bronchitis. With regard to

* About a month after writing the above. I heard this lady had had a severe attack of acute bronchitis from exposure to cold. She was taking the iodide of potassium at the time. The bronchitis was very severe, so that for a day or two her life was in danger; but she had *no asthma*, although on all former occasions on which she had had bronchitis it had induced asthma. On the abatement of the bronchitis, I advised the resumption of the iodide of potassium; and at the time I last heard from her there had been no reappearance of the asthma, and this was fully two months from the time it was first given.

treatment, there was the old story; an infinity of remedies had been tried, and, with a single exception, nothing had done him any permanent good. That exception was chloroform, which never failed to give immediate relief. On waking each morning with his usual attack, from half a drachm to a drachm was inhaled. The difficulty of breathing at once subsided, the patient went off into a tranquil sleep, and there was an end of it; whereas, if the chloroform was not given, the dyspnœa would go on increasing, become very tedious, and very likely culminate in a regular attack. But with this single exception, all remedies that had been tried appeared inert. Several things that had not been employed I made a trial of, but with an equally unfavorable result till I tried iodide of potassium. The effect of this was very soon shown. No severe attack occurred after it was commenced, and in a few days the regular morning attacks ceased also. The patient now slept all night without disturbance, and there was no longer any necessity for resorting to the chloroform. This went on for six weeks; the iodide of potassium was then left off. In a few days the asthma began to show itself again, and in a week or two was as bad as ever. The iodide was then resumed, with the same beneficial results as before. I have not heard of this patient now for more than a month; and this very circumstance inclines me to hope that this remedy still keeps his enemy at bay.

It should always be borne in mind, in giving iodide of potassium for asthma, that it is often some time before it begins to take effect. I have a patient at the present time under my care who has been taking it for three weeks past in eight-grain doses three times a day, but it is only during the last week that any decided improvement has taken place in him. He has lost his spasms; the expectoration has very much decreased; and he has ceased to experience an abiding "thickness" and tightness of breathing that he had in the intervals of the attacks, and which never left him. His nurse tells me that whereas before, for months past, whenever he was asleep his breathing was audible and labored, and accompanied with a slight wheezing, it is now inaudible and tranquil. Yet for the first fortnight this patient derived no apparent benefit whatever from the drug, and was anxious to give it up; now, however, he is convinced of the good it is doing him, and is anxious to continue it. It may be asked, Why do I think that the improvement is really to be assigned to a remedy that seems to remain so long inoperative? Why may not the apparent benefit be a coincidence, and the drug be really doing him no good whatever? I think the

improvement is the work of the iodide, for two reasons. In the first place, from the fixedness of the patient's previous condition for a great length of time, no medicines or any other agencies that were brought to bear upon him making any difference in him. In the second place, from this tardiness of the action of the iodide of potassium corresponding with its action in other affections. How long is it, for instance, before it makes any appreciable impression upon a goître, however complete and satisfactory its results may ultimately be!

I used to think that the benefit derived from iodide of potassium in asthma was entirely due to its beneficial influence in chronic bronchitis, and therefore that the only cases of asthma in which it did any good were cases in which chronic bronchitis and asthma coëxisted, and the one was the existing cause of the other. I am compelled, however, now to abandon that view; for in some of the cases in which its efficacy has been the most striking there has not been a trace of bronchitis.

Another theory that I once held I am also obliged to abandon—namely, that it was of advantage only in those cases in which the asthma was due to a gouty or rheumatic-gouty condition; and that it was by relieving this condition that it relieved the consequent asthma. In two of the cases that I have related this view would be borne out, for there was evidence of gout in both of them; but in the third there was not a trace. Moreover, I have seen cases of true gouty asthma in which iodide of potassium has been of no service.

Of its ultimate and exact *modus operandi* I can neither offer any explanation nor form any reasonable opinion. I am not, however, the less satisfied of its occasional great value, and of the propriety of its use in any case in which it has not been tried.—*London Lancet.*

DIETARY IN DISEASE.

By EDWARD SMITH, M.D., F.R.S., F.R.C.P., Assistant-Physician to the Hostal for Consumption and Diseases of the Chest, Brompton.

I purpose, in a short series of papers, to state, in the most concise manner, the views which I entertain, and the grounds of them, in reference to the most suitable dietary in certain conditions of disease; and, in order to avoid repetition and misconception, I shall premise two general observations—viz.: that as in cases of disease there are degrees in severity and progress

as well as certain exceptional conditions, I purpose to refer to those which present the usual symptoms, and have the fully developed effects of the disease, but are nevertheless in a remediable stage; and also that I do not intend to consider the pathology of disease further than may be necessary to establish bases for treatment. It will also be impossible for me to discuss at length the arguments by which any particular statement may be supported, but must be content to refer to the works of authors of the best repute, and to my own papers in the "Philosophical Transactions," or the separate works on the "Cyclical Changes" and on "Consumption in its early and remediable Stages."

I. Diabetes.

Wasting is the central condition of diabetes, around which all the other symptoms which mark the progress of the disease group themselves.

This is not due to defect of ingesta, for, contrary to other states of wasting, the appetite for fluid and solid food is increased; the egesta are also increased, both absolutely and relatively to the ingesta.

The wasting of the body must be almost exclusively of the soft tissues, and hence must be of fluid (seeing that nearly 80 per cent. of the weight of the body is water) and fat and other products of tissue-waste. In this disease the wasting is—

1st. Of fluid, and that only through the kidneys; for the skin, lungs, and bowel emit rather less than in health.

2d. Of sugar, either eaten as sugar ready formed, or produced in the alimentary canal from starch which had not been converted into fat and deposited in the tissues, or into carbonic acid and emitted by the lungs; and in the absence of starch, from the animal tissues.

3d. Of urea, the chlorides and other salts; for whilst the quantity in each ounce of urine is lessoned, the total amount emitted daily in the stage of disease preceding extreme emaciation is increased.* When much nitrogenous food is given, urea is further augmented in quantity, and may then be more the product of food than of tissue.

4th. Of fat, which is used by the function of respiration.

Let us consider each of these as indications of treatment.

1. *The fluid.*—Without going beyond our depth, we account for the dryness of the skin and fæces by the excessive elimina-

* In a case which ended fatally the quantity of urea emitted daily in January, was found by me to be as follows: 665, 624, 561, 700, 650, 650, 816, 792, 825, 729, 552, 540, 540, 610, and 533 grains.

tion of water by the kidneys, since the same correlation is observed daily in both health and disease. The thirst is consequent upon the excessive excretion of water, as it is under the influence of excretion or heat in health. Hence to diminish the latter and increase the former we must lesson the excessive excretion of water by the kidneys. The excretion is increased by the ingestion of fluids, whether separated or combined with solids; and so long as the latter is uncontrolled it will support or increase the former. In scarcely any case of diabetes is the quantity of ingested fluid recorded; in exceedingly few has it been limited, and where limited the restriction has been extreme, and the quantity allowed has been below that needful in health—as, for example, a pint and a half of fluid. Yet nothing has been more clearly proved than that the emission of fluid from the body is increased or diminished by the imbibition of it, and that a certain supply is necessary for the due peformance of vital actions. Hence the quantity must be limited; but not in a sudden manner, since the circulation has in a degree become accustomed to this large ingestion and emission of fluid, and to suddenly diminish the volume of the blood might arrest all vital actions; but by degrees and steadily, until it shall scarcely exceed, but be not less than, that in health—as, for example, in the fluids $3\frac{3}{4}$ lbs. (3 pints), and in the solids $1\frac{1}{2}$ lbs.

What relation has the sugar to the water? Excessive elimination of water alone is more easily controlled than when sugar is largely present with it. Hence are both due to some anterior and common cause? or is the sugar a diuretic agent? In my experiments upon myself, in health, I found sugar to promote diuresis when taken with water only on an empty stomach in the morning; and although this was not always the case, the effect was so frequent that in the treatment of diabetes the mutual relation of the water to the sugar should be so regarded, as that water is necessary to the emission of sugar, and sugar is promotive, within limits, of the emission of water. Hence another reason for limiting the ingestion of water, and another explanation of the partial inefficacy of the plan; for if sugar be a diuretic, it will abstract fluid from the tissues if there be none to spare in the blood, and thus increase waste.

What relation have the urea and salts to the water? There is no evidence to show that urea and the chlorides are diuretic, yet they require water for their elimination; and *cæteris paribus*, as the water is increased daily so also (but not necessarily in proportion) will be the excretion of the urea and salts. Hence another reason for controlling the ingestion of water.

2. *The sugar.*—The daily ingestion of separated and combined sugar in health is from two to four ounces; but sugar is produced in the primary transformations of starch within the body by the action of the saliva and the pancreatic juice, and also (in however small or large a proportion) from the animal tissues. Both classes of foods agree in furnishing carbon, hydrogen, and oxygen, as carbonic acid and water, and perhaps free hydrogen, in their transformations, and differ chiefly in that flesh contains nitrogen and a larger proportionate quantity of fluid, and is eaten in much less amount than starchy foods. Hence, if for no other reasons, starchy foods will be the chief sources of sugar; but when flesh and other animal foods only are eaten, the converse will be the case. Recognizing the arrest of our knowledge at the point of the non-conversion of sugar into its subordinate elements, and finally into carbonic acid and water, (whether, with Barnard, we admit the conversion of the amyloid substance of the liver into sugar, or, with Pavy, believe that sugar is not converted into amaloid substance during life, and is subject to no transformation,) the aim must be both to lessen the source of the sugar and to promote the process of assimilation. *For the former we lessen the ingestion of sugar and starch—the chief sources of the sugar; and for the latter, increase the ingestion of nitrogen—the chief excitor, in the absence of exertion, of vital action.*

Hence the supply of the almost purely starchy foods, as arrowroot, tapioca, and sago, and the starchy foods poor in nitrogen, as rice and potatoes, should be entirely cut off, whilst the more highly nitrogenized vegetable foods, as wheaten flour, oatmeal, barleymeal, or ryemeal, must be used only within the narrowest limits. The highest nitrogenous foods of this class, as peas, beans, and lentils, if starchy food be given at all, should be eaten alone, or eaten with sharps—the inner husk of wheat. Beans in the whole scales should not be given, since only the inner part is digested, whilst the outer and by far the heavier portion passes off by the bowel; and hence bean, unless it could be taken in great quantities, can afford only an inconsiderable amount of nutriment.

Separated sugars have been given purposely as an article of food in diabetes; and why should they not be given? If the quantity of sugar excreted be increased only by the amount ingested, the chief effect has been the waste of so much food. The treatment is so far rather useless than injurious; but whether the mere absorption of so much useless matter, followed by its rapid excretion from the blood, interferes with other vital pro-

cesses, and thereby does harm, is not known. If sugar act as a diuretic, its presence must be injurious; but if not, the evil which it does may be fully counteracted by the good effect of other components of the food with which it may be associated, as in the use of milk. *But sugar cannot be regarded as food when it is given to a diabetic patient*, and since it does exist in the urine, it is better that it should be produced from starch than given ready formed, since the transformation of the latter produces animal heat, whilst the mere absorption of sugar into the blood does hot increase heat. Well-fed flesh should be allowed, since the juices are rich in nitrogen, and the whole lean substance has much nitrogen in proportion to the carbon. In like manner, the preparation of gluten, albumen, aud gelatin, although containing about 40 per cent. of carbon, are the richest foods in the proportion of nitrogen to carbon. Skimmed milk, and butter-milk, and then new milk, rank next in this relation, and at the same time supply fluid.

But with every attempt at limitation in the quantity of starch and sugar, a quantity of carbon and hydrogen must be allowed at least equal to that used in health, or wasting will occur both from defect of ingesta and excess of egesta; and as I know, conditions allied to scurvy, and even death itself, may result, and have resulted, from this so-called remediable starvation. In a state of quietude in health not less than 9 oz. of carbon, and with ordinary exercise not less than 10 oz., must be supplied daily. These quantities, apart from the hydrogen, may be found in from 31 oz. to 35 oz. of bread, in about 13½ oz. to 15 oz. of fat, and in about 8 to 9 pints of new milk, and 9 to 10 pints of skimmed milk or butter-milk. It is very difficult to assign the equivalent in meat, since it depends upon the amount of fat contained in its juices, or laid up separately with the flesh, but ordinarily from 26 oz. to 29 oz. of meat would be required to furnish that amount of carbon. Hence it is easy to supply enough carbon for the production of animal heat from either separated or combined fats; and since, in the absence of starch, this is the chief source of the carbon which is converted into carbonic acid, we must trust to fat and oils as to a sheet anchor. The nitrogen to be supplied in diabetes, even when improvement has taken place, must not be less than 300 grains daily, and the quantity may be increased indefinitely, subject only to the limitation in the carbon which is associated in foods with it.

3. *Urea and salts.*—The quantity of these substances emitted must not be greater than the equivalent supply in the food,

since otherwise they must be more abundantly derived from the tissues. Abundant nitrogen in food and a large emission of urea are proper. When, in the last stages of the disease, the digestion is very much weakened, a large part of the nitrogenous food will pass off by the bowel, and will not be converted into urea; and hence, with abundant food, the urea will be less than the equivalent nitrogen in the food.

4. *Animal heat.*—The production of animal heat is greatly lessened in diabetes, since so large a part of the healthy chemico-vitral transformations of food does not occur; and in order to maintain a due amount, it is essential that fat and other animal food capable of final transformation into carbonic acid should be continually given. The condition of the skin aids in lessening this evil, since diminution in the vaporization saves heat, and heat is chiefly lost by the less costly method of radiation. When sufficient woollen clothing is worn, and heat is supplied directly by hot food, the evil is proportionally lessened.

It may not appear philosophical to try to induce the conversion of sugar by secondary agencies, or the elimination of fluid by other organs than the kidneys, and by way of derivation; yet all the usual efforts to maintain health tend to that end: as, for example, exertion in the open air, which, through increase of the respiration, will increase the elimination of the final products of the conversion of sugar—carbonic acid and water, and by the increase of capillary action will tend to increase perspiration. Hence, exertion and free exposure to the air in the early periods of the disease are very important. The use of tea is also very beneficial, since it tends to increase both the respiratory and the cutaneous actions.

Thus, a summary of the proper diet in diabetes is as follows:

1. *Fluids.*—To be limited by degrees daily until they shall not exceed five pounds and a half in both fluid and solid food. Of this quantity two to three pints should consist of new or skimmed milk, and one pint, or less, of tea. In the cold season and at night they should always be given when hot. Of all alcohols brandy is the best, and may be given with water only, or added to milk, or beat up with egg and milk, and given several times daily. No fluid should be given in greater quantity than half a pint at a time, and when milk is reduced in volume by cooking, the daily quantity of fluid must be made up by an additional supply of the same or other fluid.

2. *Solids.*—Dr. Prout's combination of eggs and milk (with sharps substituted for bran) is excellent. Four ounces of sharps and 4 oz. of peas, beans, or lentils may be made into bread or

pudding, with milk, or into omelettes with eggs and herbs.—Eggs and gelatin may be given when starchy food cannot be altogether intermitted. Eggs, gelatin, cheese, gluten bread, meat, fat, and oils may be given as largely as they can be digested. The free use of solid oil should be urged, whether in the cooking of fish or flesh, or in the use of water-cress as a solid, or drunk alone, so that several ounces may, if possible, be consumed daily; but as there are in all persons preferences and dislikes in reference to particular fats, that kind—whether butter, suet, oil, or fat of meat—should be allowed which is the most agreeable. Four oz. of sharps, 3 oz. of wheaten flour, 5 oz. of peas, 1 lb. of meat, 2 oz. of cheese, 2 pints of milk, and 3 eggs, will afford more than about 13 oz. of carbon and 1 oz. of nitrogen daily.—*London Lancet.*

ON THE HYPODERMIC TREATMENT OF UTERINE PAIN.

By J. HENRY BENNET, M.D.,
Late Physician-Accoucheur to the Royal Free Hospital.

I am not aware to what extent the hypodermic injection of sedatives has been resorted to for the treatment of uterine pain, since it was first introduced to the profession, but I am desirous of giving my testimony to its extraordinary efficacy in cases presenting that symptom. I may add, that my attention was first forcibly directed to this mode of treatment by the valuable papers of Mr. Charles Hunter in *The Lancet.*

During the present winter, I have used, with prompt and marked success, the hypodermic injection in several cases of severe dysmenorrhœa, with or without hysterical complications, and several others of uterine and ovarian neuralgia, and of facial neuralgia having uterine origin. The relief has been obtained in from fifteen to thirty minutes, without being attended or followed by the headache, loss of appetite, or nausea which are so frequently theates in a result of the use of opiny other way, even by injection into the rectum. This latter mode of administering opiates has hitherto been my sheet-anchor in the treatment of uterine spasms and pain, and is certainly most efficacious; but it is not unfrequently attended by all the abovementioned drawbacks, from which the hypodermic injection appears to be singularly free. In nearly all the instances in which I have tried this mode of introducing opiates into the system,

the sedative result alone has been produced; there has been no subsequent bad effect whatever.

In one case of severe uterine tormina and pain, the result of arrested menstruation from cold, I injected thirty minims of the solution of morphia. In half an hour the pains, which had been agonizing for the previous twenty-four hours, were calmed. A good night's rest followed; and the next morning the menses had resumed their course, and my patient was all but well. In another similar case, the uterine pain was accompanied by severe hysterical symptoms. The injection was followed by the same favorable result:—ease, sleep, and rapid disappearance of all morbid symtoms.

Owing to the complete control over the element of pain which the hypodermic injection of opiates appears to give, I have been able to carry on the necessary treatment, in an interesting case of uterine disease, which I should otherwise have been obliged to treat under chloroform, or at a great disadvantage. The patient, a young German lady of twenty-four, came to Mentone last autumn, by direction of her medical attendants, with the view of spending the winter in the South. She was considered to be suffering from neuralgia, facial and general, and from nervous irritability of the system in general. She had been traveling with her husband from place to place from bath to bath, in search for health, for more than two years. On being consulted, I recognized the existence of a host of uterine symptoms, and found that the neuralgic and nervous illness had manifested itself after a severe confinement, which had occurred about three years ago. The discovery of extensive inflammatory ulceration of the neck of the womb gave the key to the state of ill health. Singularly enough, none of her previous medical attendants had suspected the uterine origin of the neuralgia. Such cases are always very difficult to treat; interference with the uterine lesion all but invariably rousing the neuralgia. I have repeatedly had cases of the kind that I could only examine and treat locally, by giving chloroform to the full surgical extent on each occasion, and this I have had to do twenty or more times in the same patient.

With the patient in question the surgical treatment of the ulceration was borne tolerably well at first, but as the diseased surface became more healthy, and consequently more sensitive, endurance diminished. Every time the sore was touched, severe neuralgia followed, and the general health began to flag. In former days I should have suspended all treatment, and have sent the patient to the country for couple of months to allow

the nervous system to calm down, and to let Nature do her best. In this instance such a course was not desirable, my patient being very anxious to continue the necessary treatment so as to be locally cured before we separated in the spring. I thought, therefore, of the hypodermic treatment, and tried the injection of thirty minims of the solution of morphia immediately after each uterine dressing. This course was attended with complete success; no neuralgia ensued, and I have been able to continue uninterruptedly the treatment now all but brought to a successful issue. On one occasion I omitted the precaution, and was sent for at ten o'clock at night. I found the patient a prey to a most distressing attack of facial neuralgia, which had come on an hour before. She was positively convulsed and shrieking with agony. Chlorodyne, sulphuric ether, &c., had been taken, with no relief. I injected the thirty minims of morphia solution, and in twenty minutes she was calm and free from pain. It was repeated next day, and the facial neuralgia has not returned. This lady no doubt will gradually recover her health and get rid of the neuralgia when the uterine disease is thoroughly cured.

In a case of pure neuralgia, attacking first one and then another part of the body, I have injected from twenty to thirty minims of the acetate of morphia solution, forty-two days in succession, without any unfavorable result. The neuralgia, which was very severe, was entirely subdued by it for about eighteen or twenty hours, when it re-appeared, gradually increasing in intensity until the injection again relieved it. At the end of that long period the pains gave way, the treatment having been either curative, or having allowed the neuralgic attack to wear itself out. During the entire period of treatment, the patient, a very delicate lady, slept better than usual, ate as well (her appetite being usually bad, and the digestive powers weak), and was able to take part socially in all that was going on around her. No one, indeed, was aware, except her family, that she was suffering from so painful a malady. To my surprise, I was able to suspend the morphia suddenly, without any of the distress and discomfort which is habitually observed when opiates have been long used and are abruptly abandoned.

From what I have seen of the hypodermic system, I believe that its use is capable of great extension in the treatment of pain generally. I consider that the injection of a solution of morphia after any operation would deaden pain, and produce a general calm of the system both soothing and beneficial to the patient. I think also that this result might be obtained in most

cases without the usual drawbacks of opiates taken internally.

Some years ago, I recommended in this journal the injection of opium into the rectum as a means of modifying and even arresting obstinate sea-sickness. Since then various additional cases have come under my notice illustrating its efficacy. The great difficulty to all medication in sea-sickness is the fact that the stomach absorbs fluids with difficulty. By injecting subcutaneously, this difficulty is got over. Moreover, a sub-cutaneous injection would be managed easier on shipboard than the rectal injection, to which most people have a very natural antipathy.

I have used all but exclusively a solution of acetate of morphia in distilled water. Nine grains dissolved in two ounces of water gives a strength about equivalent to that of laudanum. The liquor morphiæ of the Pharmacopœia contains spirit, and and I have found that it constantly occasions small patches of painful inflammation; without the spirit, on the contrary, it appears to be quite innocuous. A moderate sized steel needle or canula I find preferable to the small gold one. The steel canula is sharper and passes easier through the skin. By pinching firmly the fold of skin that has to be pierced between the finger and thumb, its sensibility to the puncture is much diminished. It does not seem to matter much, as regards results, in which region of the body the injection takes place. I have principally chosen the præcordial region for uterine and general pain, and for local neuralgia, a spot as near the region affected as possible.

Book Notices.

A Treatise on Gonorrhœa and Syphilis. By Silas Durkee, M.D., Consulting Surgeon to the Boston City Hospital; Fellow of the Mass. Med. Soc.; &c., &c. Second Edition revised and enlarged. With eight colored Illustrations. Philadelphia: Lindsay & Blakiston. 1864.

This is a neatly printed volume of 467 pages, illustrated by eight very valuable colored plates. The style of the author is clear, concise, and pleasing. He has embraced in the work a consideration of the whole subject of gonorrhœal and syphilitic affections, both primary and remote. His opportunities for observation and practical experience in the treatment of these

diseases appear to have been ample; to which he has added a thorough study of what has been observed and written by others. These advantages, added to a well-balanced and well-disciplined mind, have enabled the author to give us as good a practical treatise on these important topics as any with which we are acquainted. We recommend the work to our readers as one of positive merit, and worthy of the general patronage of the profession.

Outlines of Surgical Diagnosis. By George H. B. Macleod, M.D., F.R. C.S.E.; Fellow of Faculty of Physicians and Surgeons of Glasgow; Lecturer on Surgery at Andersonia's University, &c., &c., &c. First American Edition, reprinted from advanced sheets. New York: Bailliere Brothers, No. 520 Broadway. 1864.

This is a neatly published octavo volume of 505 pages. In the introductory chapter, of sixty pages, the author briefly discusses the conditions, means, and methods of diagnosis. In the remainder of the work, he gives a concise statement of the important points of diagnosis in tumors, morbid growths, fractures, dislocations, and surgical diseases generally. From such examination as we have been able to make, we think the student, and young surgeon especially, will find the work a valuable one for study and reference.

Military, Medical, and Surgical Essays. Prepared for the United States Sanitary Commission. Edited by Wm. A. Hammond, M.D., Surgeon-General U.S.A. Philadelphia: J. B. Lippincott & Co. 1864.

This is a volume of 550 pages, elegantly gotten up by the publishers. Its contents are composed of seventeen essays, on the following subjects, viz.:—

I. Military Hygiene and Therapenties, by A. C. Post, M.D., and Wm. H. Van Buren, M.D., of New York.

II. Control and Prevention of Infectious Diseases, by Elisha Harris, M.D., of New York.

III. Quinine as a Prophylactic against Malarious Diseases, by Wm. H. Van Buren, M.D., of New York.

IV. Vaccination in Armies, by F. G. Smith, M.D., and Alfred Stille, M.D., of Philadelphia.

V. Rules for Preserving the Health of the Soldier, by Wm. H. Van Buren, M.D. of New York.

VI. Scurvy, by W. A. Hammond, of Washington.

VII. Miasmatic Fevers, by John T. Metealf, M.D., of New York.

VIII. Continued Fevers, by J. Baxter Upham, M.D., of Boston.

IX. Yellow Fever, by J. T. Metealf, M.D., of New York.

X. Pneumonia, by Austin Flint, M.D., of New York.

XI. Dysentery, by Alfred Stille, M.D., of Philadelpha.

XII. Pain and Anesthetics, by Valentine Mott, M. D., of New York.

XIII. Hemorrhage from Wounds, and the best means for arresting it, by Valentine Mott, M.D., of New York.

XIV. Treatment of Fractures in Military Surgery, by John H. Packard, M.D.

XV. Amputations, by Stephen Smith, M.D., of New York.

XVI. The Excision of Joints for Traumatic Cause, by R. M. Hodges, M.D.

XVII. Venerial Diseases, by F. J. Bumstead, M.D. of New York.

The titles to the several essays, with the names of the authors, will give the reader abundant assurance that the volume is one of much interest and value to all members of the profession, and especially to those connected with the army.

It is for sale by S. C. Griggs & Co., Lake Street, Chicago.

A System of Surgery; Pathological, Diagnostic, Therapeutic, and Operative. By Samuel D. Gross, M.D., Prof. of Surgery in Jefferson Medical College of Philadelphia; Surgeon to the Philadelphia Hospital; Member of the Imperial Royal Medical Society of Vienna, &c., &c. Illustrated by over thirteen hundred engravings. Third Edition, much enlarged and revised; in two volumes. Philadelphia: Blanchard & Lea. 1864.

The first edition of this great and valuable work on surgery, was noticed at length in this Journal, at the time it was issued from the press. Since that time it has become so well known to the profession, both in this country and Europe, that it needs no further commendation from us. The present edition has

been carefully revised by the author. It consists of two volumes of more than 1000 pages each; printed on fair type, and elegantly bound. It is probably the most complete and valuable treatise on surgery, accessible to American students and practitioners.

For sale by S. C. Griggs & Co., Lake Street, Chicago.

Editorial.

Chicago Medical Society.—This Society continues to prosper in our city. We are glad to see that most of the well-educated young men who locate in the city, promptly seek for membership, and are cordially received. With the commencement of October, the weekly meetings of the Society were resumed, and have been well attended. Though the meetings as heretofore conducted are interesting and profitable, yet we think there is room for improvement, especially in the manner of discussing important questions in pathology and practice. Instead of restricting each member to *ten minutes* in the discussion, for the purpose of allowing all the members opportunity to speak during the same evening, it would be more interesting and profitable to have those who speak on any subject occupy time enough to develop all the facts concerning it, and if necessary let the same topic be continued for two or three evenings in succession. The ten minutes rule leads to a disultory conversation, without the thorough discussion of anything.

Chicago Medical College.—The fifth annual course of instruction, in this institution, commenced on Monday evening, October 10. The general introductory lecture was delivered by Dr. M. O. Heydock, Professor of Medical Jurisprudence and Lecturer on Materia Medica.

The lecture room of the college was well filled, chiefly with medical students and practitioners. The evident object of the lecturer, was to strongly impress upon the minds of the class

the necessity and advantages, of patient application and untiring industry in the prosecution of their studies. The lecture was well written, and listened to by the audience with pleasure and profit. The number of students in attendance is one-third larger than during any previous year. The hospital is also well filled with patients, laboring under acute diseases and idiopathic fevers, affording ample facilities for true clinical instruction. We take pleasure in thus chronicling the steady progress of both the college and the hospital, for they are fully entitled to the confidence and support of the profession.

A New Ambulance.—Assistant-Sugeon Howard, of the U. S. Army, has prepared a model for an improved Ambulance, for use in the army.

Promotion.—Surgeon Richard S. Satterlee, of U. S. Army, has been promoted to the rank of Brigadier-General.

Surgeon-General of U.S.A.—Dr. Joseph K. Barnes has recently been appointed Surgeon-General of United States Army, in the place of Dr. Wm. A. Hammond, removed.

Explanation.—We shall hereafter continue to issue the Examiner without trimming. Almost all our subscribers wish to have it bound in a volume at the end of each year; and experience has fully shown that the trimming of each number, as it is issued, so frequently cuts the pages irregularly that it injures the volume, for binding, when completed.

Symptoms of Poisoning Following a Dose of Disulpate of Quinine.—Sir, I beg to forward the accompanying case, as I think it may prove interesting to many members of the profession:—

I was called in great haste one evening to a case of supposed poisoning. On arriving at the house, I found the man much better, but thought it safer to administer an emetic. On making enquiries, I found that he had prescribed for himself a mixture of sarsaparilla and quinine, which he had purchased from a druggist. The symptoms of poisoning came on after the first dose of this mixture: within a few minutes there was

severe pain and burning in the stomach; the face swelled; the mouth felt drawn forwards; then the legs and body swelled, and became very red, with intolerable itching, followed by a rash of urticaria. I thought it possible that some poison had become accidentally mixed with his mixture, and so the case rested for a time. However, shortly afterwards the man had an attack of pneumonia, and during his convalescence quinine was prescribed. Upon taking the first dose (two-thirds of a grain, Howard's), all the symptoms above described came on, clearly proving that the quinine was the original cause of the mischief.

I think this case interesting from the singularity and violence of the symptoms produced by so small a dose, and also as showing how a druggist may be unjustly blamed from an idiosyncrasy of a patient. I am, sir, your obedient servant,

Bradford, Feb. 1864.—*London Lancet.* E. H. Roe.

Uterine Action During Sleep.—Sir, I have read with great interest Dr. Palfrey's case in reference to the above subject, and, in confirmation of his opinion, beg, to forward you the following statement.

I was called on the morning of the 20th of October last, to see a lady in her second confinement. Her residence being within a few doors of my own, no time was lost in visiting her. I found the child's head resting upon the perineum, and in a few minutes she was safely delivered of a fine healthy son. On going to bed the previous night she felt quite well, and had no intimation of the event about to take place, except a slight discharge, of which she took no great notice.

In this case, there is no doubt that the whole stage of dilatation, and partly that of expulsion, had taken place during sleep, as from her awaking until the birth of the child no longer period than half an hour could have elapsed. Her first confinement, some twelve months previously, had been very severe, occupying some forty-eight hours, with delivery by forceps. In this instance there were only three or four labor pains, and no after-pains whatever. I am, Sir, your obedient servant,

John Harvey, M.D.

Cheltenham, 1864.—*London Lancet.*

In the Vomiting of Pregnancy.—Dr. Kroyher, of Presburg, considers the tincture of nux vomica a specific. He directs a few drops to be taken in a little aromatic or cherry-laurel water, increasing it to ten, twelve, or eighteen drops, if necessary, every morning early, and in the evening. *Br.* 3–156.

A Forearm Wrenched off during Efforts at Reduction for Dislocation.—M. Adolphe Guerin related to the Paris Surgical Society, of which he is a member, the following extraordinary case. A woman aged sixty-three was admitted into the St. Louis Hospital for a luxation of the shoulder-joint of three months' standing. On examination, it was found that the humeral head was lying under the coracoid process; and, notwithstanding the long time the dislocation had existed, M. Guerin immediately gave directions for an attempt at reduction. Not having pulleys at hand, mere traction was tried first. Extension was made by a lac, first fixed above the elbow, and afterwards at the wrist. Counter-extension was employed as usual, and four very intelligent and steady pupils were desired to pull gently, steadily, and without jerking. Whilst traction was thus gradually being accomplished, a snapping noise was heard, and the forearm fell to the ground, the operators, rather terrified, being besprinkled with blood from a spouting artery. M. Guerin controlled the vessel immediately, applied a ligature, pared the wound, sawed off the protruding portion of the humerus, covered the wound with a lateral flap farmed by the tearing process, and obtained a stump of the usual kind. By examining the forearm lying on the ground, it was found that the severance had taken place at the elbow, and the forearm seemed to have broken off like a dead bough breaks off from a tree. The bones and surrounding parts were soft and friable, and the muscles could easily be unravelled with the finger, like a clot of blood. All the textures, in short—vessels, nerves, muscles, and bone, were discovered to be unsound, and the radius and ulna were snapped across by the moderate traction which the students had employed. Microscopic examination confirmed these views. M. Guerin considered that the alterations above alluded to were the result of the compression of the brachial plexus during the luxated state of the head of the humerus; and he thought that the practical lesson to be derived from this accident was, that surgeons having to treat luxations of three months' standing will do well to order tractions of a very moderate kind, so as to avoid so unpleasant an issue as the one just described. It seems to us that the *age* of the woman had a good deal to do with the result; nor can it be overlooked that the pulling of four persons at an aged patient's arm was in itself a prodedure of some peril.—*London Lancet.*

Paraplegia.—Dr. Brown Séquard says that nux vomica should be avoided as a most dangerous poison, in all cases of

paraplegia in which there are signs of congestion or inflammation of the spinal cord or its meninges, for in these it but increases the cause of the paralysis, and produces an aggravation of the symptoms. He says there are two distinct groups of cases of paraplegia, one distinguished by symptoms of irritation, the other characterized by the absence of them. The symptoms of irritation observed in the former class are convulsions, cramps, twitchings, erection of the penis, formication, and itching; diminution of temperature, wasting of the muscles, œdema, bed sores, and alkaline urine. In the second class all these symptoms are wanting, and the paraplegia is caused by the white or non-inflammatory softening, or is of the reflex kind; for this class nux vomica is particularly applicable, from the power it possesses of augmenting the amount of blood sent to the spinal cord and membranes, and, from the extra nutrition thereby derived, of increasing the vital properties of this nervous centre. —*Braithwaite* 43–26.

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ARTICLE XXXVII.

SOME ACCOUNT OF THE PREVAILING EPIDEMIC IN THE NORTH-WEST, VARIOUSLY DESIGNATED, BUT USUALLY POPULARLY DENOMINATED "SPOTTED FEVER."

By J. ADAMS ALLEN, M.D., L.L.D., Prof. Prin. and Prac. Med. and Clin. Med., Rush Med. College; Formerly Prof. etc., in the Indiana Med. College; Late Prof., etc., in the Med. Department of the University of Michigan; Ex-President of the State Med. Society of Michigan, etc.

Presented to the Illinois State Medical Society, May, 1864.

The peculiar severity and remarkable prevalence of the epidemic popularly called "Spotted Fever," and the great anxiety which manifestly prevails, to glean from every quarter information with regard to its nature, and especially its treatment, must be my apology for trenching upon the limited time of the Society by a brief paper upon the subject.

The writer claims as large an experience in this form of disease as has probably fallen to the lot of any living member of the profession, as it has happened to have been his fortune to pass through as wide a spread and devastating epidemic of it as any with which medical history acquaints us.* Limited in range, compared with Asiatic Cholera, Yellow Fever, or the Plague, nevertheless, by its intensity and mortality, in the par-

*The number of cases, personally observed by the writer, was not less than a thousand, and probably many more than that number.

ticular districts which it attacks, the writer does not hesitate in saying that it is vastly more to be dreaded in any community than either of the forms of disease mentioned.

In the present paper the writer must premise the regret that fire, which is no respecter of persons, destroying his residence and its contents, in the spring of 1851, spared not his memoranda of this terrible epidemic, which devastated many parts of the State of Michigan during the years 1847, 8, and 9. A record of numerous cases, in their onset, progress, and *post mortem*, was thus unfortunately destroyed. The impression left upon the writer's mind, deepened as it has been by frequent observations since that time, is too profound to depend upon any manuscript aid. Not less than five States of the North-west have recently been visited by this mortal disorder. A very little light is better than none in a dark place, and it is not hazarding too much to say that no man as yet so well understands the "Spotted Fever" as to be incommoded by the slightest additional information on the subject.

Of the spotted fever very little is found in the text-books, and our own observation is, that of the various monographs on the subject, but few, if any, reflect the personal experience of their writers.* Even the name is a subject of dispute—*stat nominis umbra.*

The diagnosis is comparatively clear to any one with even slight experience—unfortunately the reliable therapeutics puzzle and confound the most expert. Most remarkable as an epidemic, yet it often occurs sporadically, and in the latter case the diagnosis usually is—*congestion* of this, that, or the other organ, more frequently the brain. As though the term *congestion* explained anything!

In observing the phenomena presented, we may premise that they simulate the toxicological—we can scarcely resist the belief that they are caused by a specific *materies morbi*, which the popular opinion readily conjectures to be a contagious principle,

* Several monographs have appeared on the subject, wherein the writers speak *boldly*, although they confess to have seen not more than a half dozen cases.

yet by careful observation we become convinced that this *materies morbi* must have been generated within the system by the agency of external causes. The causes without—the poison generated within. According to the writer's observation, it is more likely to occur in winters with a variable temperature—where a few days of intense cold are rapidly followed by days of thaw, mud, and rain. Neither uniformly cold nor warm weather are so likely to engender it. But other influences unquestionably co-operate. It does not seem always confined to a particular season. We have seen cases in the wet basements of Chicago, and they have, according to the best authority, occurred in military camps in damp localities, irrespective of, or connected with, "malarious" influences. Here and there, wherever the "grand army" of the Union has been dispersed, it has manifested itself, oftentimes vaguely denominated "Cerebro-Spinal Meningitis," or "Congestive Fever," according as the reporter was, or was not, familiar with the peculiarities of the disease.

In its incursion it does not appear to select those debilitated by previous disease, in preference to the robust. It selects no particular age or sex, neither are any exempt. Nor does it seem to be influenced materially by localities—those upon the highlands, and those upon the lowlands—the rich and the poor are quite impartially seized. And yet there is a feature of causation which is generally to be noticed as common—the variable hygrometric and thermometric condition of the atmosphere. This is a point worthy of consideration in its physiological relations, and gives a glimpse of the real nature of the disease.

THE ATTACK.—The modes of attack are various, and yet all coincide in representing a potent influence upon the nervous system. More commonly this is manifested by distinct *rigor* gradually passing to general coldness, absence of pulse in the extremities, and coma, very like that of pernicious remittent, and this, it may be, without marked local symptoms. At other times *pain* is the prominent symptom—pain more frequently in the occipital or nuchal region, but very often in other parts of

the head, in the shoulders, trunk, hips, or extremities. This pain is usually sharply circumscribed, but this is not invariably the case. It becomes more and more intense, until the patient grows delirious, apparently from its severity, and then ultimates in coma, after which, the disease takes the same course as when ushered in by a chill. Or it may speedily be replaced by the rigor. The *suddenness of the attack, and rapid progress to grave symptoms* are very characteristic. The delirium which ensues upon the pain, or which supervenes upon the coma, is of the most violent character, with incessant jactitation and often vociferous and incoherent cries.

The Eruption.—Sometimes at the very outset, but usually not until the lapse of several hours—from three to twenty-four—there occurs a peculiar discoloration or eruption upon the surface, but this is exceedingly variable in its form. Sometimes it consists in simple petechial points, and again of dark discolorations of large surfaces, like ecchymosis, or rather the subcutaneous extravasation of purpura. More frequently there is no elevation of the cutis, but occasionally there are elevations of the epidermis like bullæ, with thin, dark, sanious contents. Sometimes it approximates the mulberry rash of typhus, and again it is said by some of my correspondents to look like the eruption of measles. I have never seen it take the latter appearance. The form of the eruption, although from its frequency is derived the popular designation of the disease, is not diagnostic. Mainly the evidences presented by it are those of a diffluent disintegrated state of the blood. Yet I have fancied the prognosis was modified, as in many eruptive diseases, by the brightness or lividity of the eruption. *The eruption or discoloration is not invariably present.*

Innervation.—Among the most remarkable symptoms may be mentioned persistent tonic contractions of the muscles of the back of the neck, sometimes deepening into opisthotones; convulsions, paralysis of the extremeties, particularly of the arms, and also of the optic and auditory nerves—the auditory oftenest,—remarkable soreness of the surface and joints to touch or motion.

There may be intolerance of light and sound, but oftener the special nerves involved are paralyzed. While there is the most excruciating hyper-æsthesia of the general surface, the fingers may be placed on the cornea with no flinching by the patient. Rarely the muscles of articulation and deglutition are paralyzed. Hemiplegia is not infrequent, or the paralysis may be confined to a single extremety. Strabismus, unequal size of the pupils, twitching of the facial muscles, etc., etc., are incidental symptoms.

THE PULSE, at the outset, is small, thready, tremulous, irregular, soft, and speedily lost at the wrist. On the occurrence of reaction, or remission, it increases in fulness and force. About always during the primary stage, it is slow, but during reaction it runs up to 120 or 150.

THE SKIN is, in most cases, dry as well as cold, but in perhaps twenty-five per cent. it is moist. In all instances, it is variable at different hours of the day.

THE TONGUE is more or less enlarged and flabby, with indentations of the teeth upon its edges. It is pale and moist, with a coating of a pale ash or white color, passing to yellow or brown, but it does not present distinctive symptoms.

NAUSEA AND VOMITING are occasional, but not constant symptoms; the matters thrown up being the normal contents of the stomach, or, in bad cases, decomposed blood, bile, mucus, etc.

THE BOWELS are variable. Some cases are natural, in others, there is obstinate constipation, and in others still, severe diarrhœa, with discharges of grumous and offensive matters.

THE RESPIRATION is ordinarily laborious and irregular, sighing and perhaps stertorous, or hissing through the clenched teeth; more frequent than normal while consciousness continues, but becoming slower with advancing coma.

THE URINE is generally scanty, smoky, albuminous, depositing a plentiful sediment, intermixed with ropy mucus and disorganized blood corpuscles. In some instances I have known it abundant and of low specific gravity.

THE SECOND STAGE.—The first stage may terminate in death

in a few hours, or, after an interval of from six to twenty-four hours, there may occur a marked remission of the symptoms—a very deceptive remission—leading both the physician and patient to believe the difficulty pretty much over. Supervening upon the remission rapidly, or it may be upon a gradual awakening from the comatose state, there will be intense febrile excitement, great heat of the surface, rapidly and strong tension of the pulse, arterial throbbings, flushed face, turgidity of the conjunctiva, with extreme thirst, etc. This is liable to be attended with the highest grade of delirium, and frantic muscular jactitation, requiring several attendants, perhaps, to keep the patient in bed.

The delirium may, after a while, merge again in coma, apparently from utter exhaustion, or it may gradually moderate in violence and pass into the low muttering character, with subsultus, etc., the patient supine, with the extremities fixed, and painful to touch or motion; or in some cases turned rather to the prone position, with, in either case, the posterior muscles of the neck fixed rigidly, drawing the head strongly backward. Occasionally it is drawn laterally backwards, but is always in a state of rigid immobility.

In this stage the bowels are inactive, and the urine either scanty or wholly retained. The skin is hot, but not infrequently reeking with an offensive perspiration. Irregular or partial sweats are common. Convulsions, paralysis, pain or other evidences of central nervous disorder, are largely aggravated.

The patient may die in this stage, or

Later, may pass on with irregular febrile phenomena, into the low, lingering typhoid stage, stretching over even forty or sixty days, before the establishment of a tedious convalescence. The low fever which so often supervenes upon severe attacks of the Asiatic Cholera much resembles it.

From the outset there will be presented intermingled symptoms, according to the involvement of particular organs in secondary lesion. The lungs are especially liable to severe or even fatal disorder. So much so indeed as, by the gravity of its manifestations almost entirely to mask the original disease.

Dr. CONDIE, in a note to the American edition of Watson's Practice, includes a description of this form under the head of Typhoid Pneumonia, but it is unnecessary to say that the disease described is but the one now under notice, with secondary pulmonary complication.

Ulceration of the throat, the writer has observed as a complication in several cases—the destruction of tissue proceeding to an alarming extent. Erysipelas is the most frequent and dangerous of complications. It is easily kindled upon the slightest abrasion of the surface, and often, without such a nidus, attacks the face and neck, extending to the scalp, or more rarely seizing the extremities This erysipelatous affection is apt to be exceedingly destructive to the part attacked, giving rise to foul sloughing sores, rapidly wearing out the patient by exhaustion. Some of our friends who have observed this frequent concurrence of erysipelas, have been so struck by it as to be led to believe the disease essentially an erysipelatous inflammation of the cerebro-spinal tissues, as also of those organs secondarily involved.

The abdominal viscera sometimes experience the full force of the morbific influence, but in greater part are comparatively little disturbed. Epistaxis, hæmatorrhœa, hæmatemesis, and hæmaturia are occasionally present to a dangerous extent.

SEQUELA.—Among the sequela we note deafness, blindness, partial or complete paralysis of motion, tuberculosis, albuminuria. Albumen is about invariably present in the urine of the tardily convalescent, or ultimately fatal cases of long continuance. Marasmus in both children and adults, and phthisis in the latter, are especially common. The constitution seems broken down, and perhaps years elapse before the surviving patient recovers his original vigor.

POST MORTEM.*—With regard to *post mortem* appearances, there has been much apparent discrepancy of description. The explanation of this discrepancy is found easily in the fact that death may result in any stage of the disease. It thus becomes

* The *post mortem* appearances here described are those fully confirmed by the writer's own dissections.

quite difficult, at times, to discriminate the incidental complication from the primary original affection.

If the patient die in the first stage, within a few hours from the attack, there may be very few signs of local change. The blood will be found settling to dependent portions, and with a loose, gory, diffluent clot. There will be found stasis of blood in the capillaries of the cerebro-spinal meninges, particularly of the pia-mater and dura-mater, rarely of the arachnoid. The superficial vessels of the convolutions will be distended, and those upon the walls of the venticles likewise full, presenting here and there spots like ecchymosis, though more florid in hue. Sections of the cerebral substance will show a similar condition of the bloodvessels, as manifested by large red points on cutting across them. The medulla oblongata, spinal meninges, and cord, at the upper part, will exhibit similar appearances. The stasis of semi-dissolved blood is so considerable that both the gray and white tissues gain a pinkish tinge.

More or less circumscribed softening is found, usually involving the cortical substance of the cerebrum, the inferior surface of the cerebellum, and the floor of the lateral ventricle. In fine, a lessening of the firmness and density of the whole mass is evident on careful inspection. Effusion of discolored serum into the cavities is present, now and then, to a large amount.

If the case has run on to high reaction, all the results of inflammation may be present. In this case the arachnoid is apt to be thickened, and with loss of its transparency. In the exuded matters are found pus and lymph corpuscles, or the exuded lymph forms a quasi membrane, loose, creamy, and readily broken down, upon the surface, or along the course, of the large vessels. The greatest quantity is at the base of the brain, and always at the optic commissure. It is also stated to be found on the corpora quadrigemina, the medulla oblongata, and around the third pair of nerves, where they penetrate the arachnoid membrane. Wherever the exudation takes place it is likely to be stained by the dissolved hæmatin.

In the spinal region, the morbid changes affect mainly the meninges, the substance showing little modification of structure

—the most observable being softening. The exudation, discoloration, and softening are most noticeable about the roots of the cervical nerves. The thoracic and abdominal lesions present nothing distinctive. Where the lungs become involved, there are the ordinary evidences of stasis of blood and effusion, or where the later stage is reached, the usual results of inflammation. The same remark may be made of the intestinal tube.

Here rests the case, so far as my own examinations have extended, and so far as those made by others, which have fallen under my notice, have been concerned. To my own mind the morbid anatomy thus far developed, is altogether unsatisfactory. The advances of modern physiology indicate a still further exploration of the cadaver, which I confess not to have made, and am at this time only consoled in not having made, by the concurrent failure of other inquiries on this subject, and by the still more cogent reflection that probably if the examination had been made it would have proved scarcely more than negative.* But on this point hereafter.

It is proper to remark, that whilst in about every case there is on *post mortem* some visual evidence of local disease of the cerebro-spinal region, nevertheless, in very many, this evidence is very slight, and in some it is inappreciable. The disease is capable of killing the patient speedily or slowly, and yet leaving behind no trace of its footsteps. Here, as elsewhere, the facts teach that the immediate molecular changes, upon which life and death depend, are intrinsically beyond the sphere of our aided or unaided observation. We necessarily infer their existence, precisely as we infer the reactions of a chemical mixture, by observation of results, and of things which we can see, and handle, and weigh.

NECRÆMIAL CASES.—In common with many other potent influences which suddenly strike down the powers of life—the cause, or causes of this terrible disease may produce, at once, necræmial symptoms, so profound that particular manifestation

* At the meeting of the State Society, before which this paper was read, it was stated that certain recent dissections showed commencing fatty degeneration of the kidneys. In so far this confirms the writer's present views.

of the special "proximate cause" will not take place. The diagnosis here is really not of much, if of any, importance. Malignant typhus, small pox, scarlatina, rubeola, diphtheria, Asiatic cholera, erysipelas, pernicious remittent, uræmia, etc., are severally capable of producing the same condition. In this case, an overwhelming cause acts especially upon the cerebro-spinal centre, and, secondarily, upon other organs. The blood from the beginning is poisoned and scarce living, and death may ensue from this poisoning, or later, from the local changes in the brain and cord, or in some instances, from involvement of other vital organs. Probably all observable lesions are truly secondary.

Diagnosis.—The only forms of disease with which this is liable to be confounded are, pernicious remittent, ("congestive") fever and typhus. Nevertheless, as there is no limit to human absurdity, one medical journalist claims that all these noted cases are but malignant scarlatina! Such absurdity of speculation exhibits itself in too clear a light to need effort at controversy. Yet it may be observed that in the progress of pernicious remittent and malignant typhus, cerebro-spinal changes often occur, which render the diagnosis impossible; and this may not be deemed unfortunate, because at the same time it is unnecessary. Since enlightened medical men have ceased to regard diseases as entities, and no longer rely upon routine treatment, the diagnosis of names has yielded place to the search for causes and conditions, and treatment has been placed upon a broader and more certain basis.

Those who carefully notice the peculiar disturbances of the nervous system and muscular apparatus in this affection, cannot fail to see that they are exceedingly rare in the so-called congestive fever of malarious districts. There is no periodicity about it. It cannot be merely a severer form of that fever, for it occurs in districts indiscriminately where that fever is known and where it is not. It occurs at a season of the year, mainly when notoriously, pernicious remittent loses its virulence; and, indeed, is scarcely ever present, save in cases which have been especially liable to attacks of periodical disease, and whose constitutions have been broken down by previous illness.

Briefly, the paralysis of special sensation and voluntary motion; the hyperæsthesia of the surface and joints, or more remarkably, of circumscribed localities; the opisthotonos and convulsions; the petechiæ and vibices; the absence of periodicity, notwithstanding marked remissions; the locality and times of occurrence; the sequela; these and many other particulars, to be seen by the seeing eye, distinguish the disease from "congestive fever," with no difficulty or uncertainty.

The influence of quinia is wonderfully diabnostic. In pernicious remittent it is prompt, powerful, and certain—it is *the* remedy, with all others ignored. In the disease under review, it is scarcely noticeable in effect, and wholly unreliable, nay, comparatively worthless as a remedy. The "*congestive fever*" bows beneath its potent influence at once—the "*spotted fever*" scorns its impression.

Practically, the *physiognomy* of the disease is as diverse as the lineaments of strangers.

Nearly the same features separate it from "maculated typhus." It is not a severer form of typhus disease, because it is rarely developed under those known circumstances which develop the latter. The nervous manifestations at the outset are wholly diverse; the mode of attack and progress of the cases are dissimilar, save that in some cases a low fever follows the secondary lesions; but well marked, and indeed some of the severest, cases are arrested, and convalescence occurs, without any such secondary fever.

The eruption, or rather extravasation of dissolved blood beneath the skin, is wholly unlike the maculæ of typhus, or the roseolar spots of typhoid. Such extravasations do not constitute the peculiar eruption of typh disease. Typh fevers are the creation of *ochlesis*, of bad ventilation, filth, and improper food. This clearly depends on meteorological influences, entirely apart from the accumulation of human beings in crowded places; independent of decomposing organic matter; independent of confined air. It attacks equally all ages, from the infant to the veteran; the out-door, laboror and the lady in the parlor.

Presenting some symptoms in common with typh diseases, its

history and physiognomy are as diverse from them as "bilious remittent" from "yellow fever."

Its diagnosis only becomes difficult from them in that necræmial condition, before alluded to, when these and a vast number of other malignant diseases are merged in common manifestations, by the overwhelming nature of the causes producing them.

Prognosis.—The proportionate mortality in the early periods of this, as of other pestilential epidemics, is something frightful to contemplate; but there always remains this well-established fact, that under about any respectable, or even so-called active, treatment, the fatality steadily diminishes with time, and the later cases are quite controllable. Its primary mortality, in proportion to the number seized, is unsurpassed even by Asiatic cholera.

Therapeutics.—It would be a happy circumstance if the treatment were as satisfactorily determined as even the character of the disease. Unhapily this is not the case; but much can be done, and many lives thereby saved, which neglected, would have been lost. This is a truth which charlatans and pretenders are ready to take advantage of, and all ears are speedily stunned by the praises of particular remedies and methods which they go around braying about. "Specifics" for it are as plentiful in every city, village, and hamlet as applicants for offices after a Presidential election; but, alas, they fail miserably in the trial.

Under the writer's own observation has come treatment which ought to make all classes of created things, from angels to jackasses, weep. We have seen men try to bring on a crisis: the *death-crisis*, which we have elsewhere exposed, by bloodletting. Others attempt the same thing by emetics and mercurial purges. Steaming is perhaps the most popular plan of producing exhaustion of the feeble remaining powers of life. We have seen long trains of wagons returning through *Michigan mud* from the hemlock woods, a score or more of miles away, laden with the precious branches, (Birnam's wood coming to Dunsinane,) greeted as Oriental pilgrims coming from Mecca.

I have known fifty grains of morphia given within a dozen

hours to a boy of fifteen, to relieve him from the terrible pain and suffering, with no avail, save that death followed.

Incalculable quantities of brandy and quinine, of capsicum and carbonate of ammonia, have been poured into the stomachs of the comatose; and there is no measurement of the amount of turpentine and other irritants, which have been thrown up, *per rectum*. The surface has been parboiled, roasted, cauterized. What have we not seen done?

There is no limit to human credulity—there is no bound to human assumption. The most trivial remedies have been ushered into notice and temporary repute under the loosest of professional hypotheses; fortunate only in that they have replaced destructive methods.

Flimsy chemical analogies, mixed with apocryphal ferments, have floated sundry inert substances into use, which luckily convert the sin of commission into the less odious sin of omission. Satisfactory treatment remains to be discovered. There are no specifics—there are no antidotes. Yet experience points to some things which seem to have done something—perhaps, *post hoc ergo propter hoc*, after all.

And, *first*, we rank external stimulants—rubefacients and artificial heat. Whatever will powerfully stimulate the surface, especially along the spine and the extremities. This not from any vague idea of internal "pressure," or "congestion," to be overcome by "determining to the surface," but for promoting tissue changes in this most accessible of the excretory organs, and thus awakening energy of the circulation, and immediately excretion of effete matters, and renewal of blood. The rubefacient becomes thus a general stimulant. With capsicum and mustard, ammonia and terebinthinates, pungent oils and friction, the means are abundant enough, and the practitioner can take his choice. But, let it be observed, to be useful the action of the surface must be awakened, and not merely irritated. Persistency, and yet caution not to destroy the tissue, must be the cardinal points in view. Direct heat, from its ultimate sedative impression, is a more questionable remedy. The hot water or vapor bath speedily exhausts; still, when the surface is dry and

rigid, these may be employed for a short time only. The alcoholic vapor bath is better.

A potent stimulent is the application of ice for a few moments, and then the alternation of hot epithems; this alternation to be frequently repeated. The intense local pain, so often present in the primary stage, may occasionally be controlled by full doses of morphia internally, but usually the amount required is so excessive as to prove dangerous of itself. Under these circumstances, the hypodermic injection will be found of greater advantage. But from the puncture there is always danger of erysipelas. The same remark applies to vesicants, primarily of excellent service, secondarily there is danger of sloughing sores. The slightest abrasion of the surface is to be looked upon with fear.

Internally stimulants and restoratives, boldly, but with due regard to their ultimate effect. Thus the alcoholic stimulant of whatever sort, when acting at all, is quite disposed to produce the sedative or anæsthetic effect, checking tissue metamorphosis; hence the disappointment so often experienced on its administration during the cold stage, or in necræmial cases. If given, it is better combined with arterial stimulants, capsicum, piperin, monarda, etc. Etherial preparations, ammonia, etc., answers well in some cases.

In the writer's experience the *tincture of cantharides* in full, and what to some would seem inordinate, doses has been found the most valuable of internal stimulants. Of this (a *proved* preparation,) from twenty to forty drops may be given every hour, until reaction ensues or strangury supervenes. The occurrence of strangury so far from being dreaded is to be hailed as an omen of the most favorable import. It may be but a coincidence, but it is fortunately an invariable one, that the patient in whom this symptom occurs, from this or any other cause, gets well. This interesting fact, observed more than fifty years ago in the history of this same disease, seems to us to let in a glimpse of light upon the therapeutics. It is not the strangury which cures, but the awakening of the nervous system and of the excretory energy which this symptom inciden-

tally manifests. The favorable result may be secured without the induction of strangury.

Where there is any appearance of erysipelas, or where there are any evidences of dissolution of the blood, as shown by the deep, livid shade of the spots, or by passive hæmorrhages, the *muriated tincture of iron* should be simultaneously administered. Coinciding with the general effect of the cantharides, it seems to especially prevent further destruction of the blood and to facilitate its repair. Besides it lessens the liability to injury of the kidneys and moderates strangury. Ten, twenty, or more, drops of the tincture of iron may be given with each dose of the cantharides, and the mixture well diluted in some convenient vehicle.

Other stimulating diuretics which we have tried have thus far proved less useful in our experience, but we favor further experiment on the point.

When pain is dangerously intense, or convulsions occur, chloroform or ether may be carefully administered by inhalation; and we should very much like to try here, as we have not yet had an opportunity, the protoxide of nitrogen or "laughing gas." Theoretically, and by analogy of its use in other cases, we are inclined to believe it would be found an invaluable remedy. Its energetic stimulating power would probably favor speedy reaction.

We have not noticed any especial advantage from quinia in the first stage, although we have given it in doses varying from a couple of grains to half a drachm every hour. The stimulating effect of the small doses is inappreciable; the sedative and diaphoretic effect of the large dose is objectionable. But when the deceptive remission occurs, we have fancied some benefit was gained by several full doses, at intervals of one or two hours—the sedative effect seemed to lessen the severity of the subsequent exacerbation, although we have found that a hundred grains thus given would not prevent its access.

Please observe, that while the writer thus ignores quinia as a curative agent of cardinal value, as some believe it, in pure cases of spotted fever, he is ready to admit the great proba-

bility of its superior efficacy in the management of cases modified by the so-called malarious influences. The same remark may be made with regard to the arsenical preparations and other "anti-periodics."

On the occurrence of the remission, or the conclusion of the first period, something appears to be gained by relieving the bowels with a moderately stimulating cathartic, particularly when the cold stage has left behind it decided engorgement of the portal system. By this means the ensuing exacerbation is ameliorated, and the tendency to pass afterwards into a low form of fever is sensibly lessened. We usually, for this purpose, combine calomel with gamboge, rhubarb, and soap, which operates freely but not violently in six or eight hours. Beyond this, or some milder cathartic, we have rarely found it useful to employ purgation. The patient cannot be cured by attempts to turn him inside out with either emetics or cathartics.

If, during the stage of excitement which now follows, the urine becomes tolerably free and charged with its solid constituents, the patient may be reckoned safe, but if it is suppressed the case is one of extreme danger.

The practitioner is apt to be deceived by the apparent excitement, and hence to resort to excessive antiphlogistic measures, but this is a dangerous error. Collapse impends, almost momentarily, and it is indispensable to be on guard. Saline diuretics, very moderate doses of the usual sedatives, and perhaps anodynes may be used; but bleeding, vomiting, and purging are out of the question. Ablutions with cold water, or the tepid bath, or showering the head, we have found in this case even more useful than in the similar stage of remittent. *When in doubt*, our own experience teaches us to say, *stimulate* even here. At all events hold up the great powers of life by careful restoratives and abundant fluid nutriment. Destructive changes will thus be prevented, the liability to collapse lessened, and the tendency to tedious low fever, with doubtful final result, abated.

But better do nothing than to do mischief. Discussion of the low fever, and the various sequela occasionally met with,

ensuing upon the attack, is not within our present purview. The treatment is comparatively clear and simple. Incidental local complications will modify each case, and the patience of even the most skilled practitioner will be severely taxed by the tedious prolongation. But the indications are so palpable and unmistakable that they need not command further notice in this place.

One or two remarks, and this already too long extended paper will be brought to a close. The term cerebro-spinal meningitis, now generally accepted as designating "spotted fever," is objectionable, in that it conveys the idea that the disease is essentially an inflammation of the parts indicated, which is clearly not the fact.

The phenomena indicate the presence of a blood poison prominently (but not invariably or exclusively) affecting the cerebro-spinal meninges.

There is reason to believe that this blood poison is generated within the body itself, by concurrence of external causes influencing especially the physiologically vicarious, yet collaborating organs, the skin and the kidneys.

There is reason to believe that elimination of that poison, and consequent cure, is to be sought among those agents which especially impress these great emunctories.

At all events, mere stimulants or antiphlogistics fail!

ARTICLE XXXVIII.

CONSERVATIVE SURGERY. CASES OF RESECTION.

REPORTED BY N. W. ABBOTT, late Surgeon of the 80th Reg't Ill. Vols.

At the battle of Mission Ridge, Nov. 24th, 1863, Harrison Hickenlooper, of the 6th Iowa Infantry, fell into my hands for treatment. A minnie ball had passed an inch or so below the head of the humerus; fracturing and very much splintering the shaft of the bone to the extent of more than three inches; extending within the capsular ligament and to the spongy portion

of the head of the humerus. Several medical officers who saw the case, concluded that amputation at the shoulder was the only alternative. My observation in other cases of resection led me to hope for favorable results in this. I commenced the operation by a straight incision, some six inches in length, commencing at a point in front and near the acromion process, carrying it downwards along the deltoid muscle on the anterior portion of the joint. The fibres of the deltoid were separated as much as possible with the finger and handle of scalpel. The tendon of the long head of the biceps muscle was found and drawn aside; the splinters of bone were carefully denuded and removed. After denuding the shaft of the humerus to the extent of the fracture, I divided it with a chain saw, through a sound portion; with a bistory I then removed the head of the humerus. The wound was sponged clean and dressed in the usual manner. After the following day this patient passed out of my care and observation, since which time I have not seen him. The following letter will show the extent of his recovery. It was written without solicitation on my part, as I had lost track of him:

"*Albia, Monroe County, Iowa*, April 8th, 1864.

"DEAR SIR:—In accordance with promise, I write to inform you of my recovery from the wound I received at Mission Ridge on the 24th of November last. I was shot, as you will remember, in the right arm, about two inches from the shoulder-joint, and the bone was shattered to pieces. I came to the hospital above Chattanooga, where you were dressing wounds and amputating limbs. I had the good fortune to come under your notice, and you resected the bone of my arm and unjointed it at the shoulder. You took out about four inches of the bone of the arm and dressed it up, and I am happy to inform you that I am now well. It is with the hand of that arm that I am now writing this letter, and to you I am indebted for the preservation of that hand at the present time. I have also pretty good use of the arm, from the elbow to my hand; and I think in time I will have a pretty good arm, although at present it is rather limber, for want of bone."

Again, July 21st, he writes:— * * * "I was

glad to hear from you, as I shall always hold you in grateful remembrance. My arm is still gaining in strength and usefulness. I am at present engaged in clerking in a dry-goods store, which business I can do very well. I can also do farm work. I can even chop wood. My arm is about one and a-half inch shorter than the other arm. The elbow-joint is as good as it ever was. I have the same use of my arm, from the elbow down, that I always had. My hand is as strong and as supple as it ever was. I cannot raise my arm from my body outward, without the assistance of the other hand. My arm is shrunk some in size, but I think it will fill out again in time. There is a hard substance, almost as hard as bone, growing from the lower end of the bone that was sawed off, towards the shoulder-joint, and is now two or three inches long, and very solid. The arm is quite well, and I can throw it about any way, violently, without hurting it." * * * * *

(Signed,) "HARRISON HICKENLOOPER,
"*Albia, Monroe County, Iowa.*"

The above letters were written in a fine business hand.

Another case was a Mr. Cox, of the 26th Illinois Infantry, now living in Marion County, Illinois. He was also in the engagement at Mission Ridge, and was wounded in the middle-third of the shaft of the right humerus. The bone was much splintered and comminuted. Near four inches of the bone was involved in the fracture. Splinters of bone were hanging in the opening made by the exit of the ball. Having determined upon the operation of resection, a straight incision was commenced some three inches below the clavicle and over the deltoid muscle, carried downwards along the external border of the biceps muscle, a distance of some six inches. The muscles were pressed aside, and all splinters of bone denuded and removed. The fractured ends of the shaft were carefully denuded, and with a chain saw divided immediately beyond the points of fracture. In this case, also, some four inches of bone was removed. The soft parts were drawn together, and secured by a few sutures and straps; cold water dressings applied. On the following day this patient passed out of my care. I had not seen

him, nor heard from him, until he called on me a few days since. I find the arm a-half inch shorter than the other. A new bone is forming from each divided end of the humerus. These new portious of bone are now nearly in contact—a-third or half inch space intervening. This man has not recovered the use of the elbow to any considerable extent. He says, however, it is of late gaining rapidly. He had some abcesses form about the elbow that have delayed his recovery. He doubtless will have a good arm.

At the battle near Dalton, Feb. 25th, 1864, Private Demsey, of the 4th Regular Battery, was wounded by a piece of shell passing through the upper part of the thigh, crushing in its course the trochanters major and minor, the neck of the femur, and splitting the head of the femur. At the request of Dr. Mensey, Medical Director, I made a resection in this case. I made a straight incision, commencing some two inches *above*, and carried it immediately *behind* the trochanter major, to a point some three inches below; was careful to avoid wounding the sciatic nerve. After removing the splinters of bone, the shaft of the femur was resected with chain saw, one or two inches below the trochanter minor. The head of the femur was then removed with a bistory. This patient was doing well the following day; but at that time he and the medical officer left in charge of him, fell into the hands of the enemy, since which time I have not heard from him.

There are other cases that I will report at some future time, if I can get on track of them and learn results.

ARTICLE XXXIX.

CASES READ BEFORE THE CHICAGO MEDICAL SOCIETY. Friday Evening, October 21, 1864.

By HIRAM WANZER, M.D., of Chicago, Ill.

Mr. President and Gentlemen:—I present you three cases this evening; one a premature birth, and two cases of injuries of the head, which I hope will prove interesting to the Society.

CASE I. Mrs. S., aged 22, some time in April last, received a fall upon a chest, injuring the small of the back, near the junction of the dorsal with the lumbar vertebra. She was a primipara—three and a half months advanced in pregnancy. Uterine contractions were induced consequent upon the injury; slight hemorrhage, &c. Large and frequent doses of opium and sugar of lead were given; rest and strict recumbency enjoined which resulted happily in arresting further parturient action. Three months after, I was again summoned to her in labor. Her pains for hours were severe. The undeveloped cervix and rigid os were long dilating. The labor throughout seemed unnatural; when at last she gave birth to a male child, at about six and a half months, with the following pathological appearances:—

At the junction of the dorsal with the lumbar vertebra had been probably a contusion, which resulted in a deep granulating ulcer some three inches in circumference, surrounding the steep edges of this ulceration was an old cicatrix, indicating the reparative process had began; the granulations looked healthy also; and had she gone on to full utero gestation, in my opinion, the process of reparation would have been complete. The point of pathological inquiry here is, as it has been questioned in the Society, do exterior causes acting upon the mother sometimes produce identical pathological results upon her offspring in utero? I answer, I believe they not unfrequently do.

Cases are vivid in my mind, I could recount from recollection, where they have. In this case the mother received a direct blow upon her spine, transmitted to the spine of her infant; this I believe was the case. The abnormal condition of the child might have been diagnosed spina bifida, but there were none of the symptoms present, no faulty formation of the vertebra, no protruding sac. The child died on the second day. The question was ably discussed in the Society by Drs. HOLMES, BARTLETT, and GROESBECK, without arriving at any definite conclusion.

CASE II. J. E., a boy aged five years, was struck by a rail car; it was a gliding blow over the lower jaw, base of the

skull, and temporal region without fracture. There was a discharge of blood from the ear, and dilatation of the pupil. He had a convulsion at my first visit, and during the paroxysm there was an alternate protruding and receding of one eye, which phenomenon I could not understand. He continued comatose several days from receipt of injury, showing marked symptoms of cerebral extravasation. He was quite unconscious of his surroundings. The organs of special sensation seemed dormant. The power of deglutition was impaired; when at last he slowly reacted from his coma, and began to take small quantities of concentrated fluid nourishment; his recovery was complete. Dr. ORRIN SMITH saw the case with me in consultation. This case was treated nearly throughout without medication. It has been my lot the past four years to meet many cases of surgical injuries about the head, and *occasionally* where I have since thought medication did my patient much harm. In traumatic injuries about the head, except severe fracture, and like surgical casualities, I had rather leave the patient to the conservative power of nature than to attempt the administration of much medicine. The point of inquiry has been occasionally with me how to more definitely diagnose between concussion of the brain and cerebral extravasation. One aged physician, emeritus professor of obstetrics in one of our colleges, who has seen much practice, tells me he has seen the same symptoms of coma, as here described, continue two weeks in concussion of the brain without cerebral extravasation; I asked him if his patient died? he said no; that he had founded his conclusions from the fact the pupil of the eye was contracted, and the patient answered coherently.

CASE III. Called to James Duffy, aged 24, October 22, 1864, at 11 A.M.; found him lying comatose and hemiplegic. At the junction of the left parietal with the temporal bone there was a circular opening, through soft parts and cranium large enough to admit the finger to the surface of the brain, detecting comminuted fracture of the skull. The bony fragments are before you. Fourteen hours after the injury, assisted by Prof. E. ANDREWS, the operation for trephining was performed; all

the spiculæ of bone were carefully removed. The membranes of the brain were penetrated by them, and also the cerebral substance; one of the branches of the middle meningeal artery was torn across. After cleansing the wound the parts were brought in apposition by interrupted sutures, compress, and bandage. He soon rallied from his coma after the operation, and recognized all around him. After reacting well from the coma and surgical interference, he was removed to Mercy Hospital, where every attention was given him. He died on the fifth day. Drs. BLAKE and BARTLETT performed the *post mortem*, and it was my privilege to be present to record the following notes: There was *post mortem* lividity of the depending portions of the body, also a peculiar goose skin appearance over the surface of the chest. Except the wound, there were no external lesions, ecchymoses, or abrasions found upon the external surface of the head. There were no lesions upon the body or extermities. Upon reflecting the scalp, we found the whole lateral surface of the head, temporal muscle, temporal fascia, and pericranium in an ecchymosed condition, showing he must have received several most violent blows upon the side of the head; upon removing the calvarium we found, as remarked, a terminal branch of the middle meningeal artery wounded. In the interior of the skull surrounding the seat of fracture was blood stain, and a corresponding ecchymosis upon the surface of the dura mater. In the arachnoid sac over the greater part of the left hemisphere there was a thin layer of effused blood, thickest nearest the injury. The parietal layer of the arachnoid showed a high state of inflammatory congestion and engorgement. The veins over the surface of the brain, and the sinuses were all unduly filled with dark blood. All the vessels of the left hemisphere were abnormally injected, together with the vena galeni, choroid plexus, and veins on the left corpus striatum; some effusion of altered lymph or pus was found under the arachnoid on the right side. There was extensive inflammatory softening of the brain from the seat of injury to the left ventricle, so that from the fracture to the ventricle there was a cavity with walls of soft ash-colored pulp. This softening involved the cerebral

substance over an area of about two inches. The brain substance between this cavity and the falx cerebri, for an inch downward was the seat of numerous points of extravasation. A thin clot rested in a slit half an inch long in the gray matter; more deeply there was the appearance of capillary apoplexy. The ventricle was filled with bloody serum; the cerebellum had participated also in the inflammatory engorgement.

ARTICLE XL.

LECTURE I.

INTRODUCTORY REMARKS—NATURE AND OBJECTS OF MEDICAL STUDY—DUTIES AND QUALIFICATIONS OF THE PHYSICIAN—INFLUENCE OF POPULAR OPINIONS—THE PRESENT STATUS OF PRACTICAL MEDICINE, &c.

GENTLEMEN:—The opening of another Annual College Term finds us again assembled in the lecture room, for one of the noblest and most important purposes that can engage the human intellect. This purpose is simply to survey the vast fields of science, in such a manner as to dilligently select therefrom all that can aid us in preventing disease, alleviating human suffering, and prolonging human life. For medicine, taken in its broadest sense, is not a science, but rather an aggregation of sciences, among which are some of the most intricate and interesting known to man. While practical medicine, strictly so called, consists in the selection, from all these sciences, of such facts and principles as can be applied to the prevention, alleviation or cure of disease. Thus, in the investigation of the causes of disease, we must enter directly into the domains of meteorology, geology, climatology and physics; in the study of remedial agents, minerology, botany and chemistry are brought into requisition at every step; while the study of pathology, or the nature of disease itself, brings us directly back to anatomy, human and comparative, physiology and natural history, as the only foundation for a correct understanding of morbid action, even in its most elementary forms. We cannot complete a sat-

isfactory examination of a patient, with reference to the diagnosis of disease, without making a practical application of some of the most important facts and principles of natural philosophy. Anscultation, percussion, the microscope, opthalmoscope, etc., are all founded on well known physical laws. You thus see how closely the subject of practical medicine is interwoven with all the natural and physical sciences; and how necessary it is that every student should be well versed in these, before he attempts to master the application of the facts and principles they contain, to the great work of elucidating the nature and treatment of disease. It is true that a man, destitute of a knowledge of these various sciences, may take a text-book on practical medicine, and learn the art of prescribing, just as a mechanic may make a complicated piece of mechanism according to pattern, without any knowledge of the principles on which its practical operation depends. But, either, to be a *master* in his calling, capable of independent thought, and of the adaptation of means to the varying conditions and circumstances presented to him, must also be master of the sciences from which have been selected the facts and deductions embodied in the text-book or guiding in the construction of the pattern.

Living actions, whether healthy or morbid, are not like mathematical problems, composed of fixed elements, and subject to fixed rules for their solution; but they are phenomena whose specific character, tendency and results are as various as the physical and mental temperaments of individuals, aided by the ever changing conditions of age, sex, social condition, diet, climate, season, etc. And yet it is directly with such living actions, both healthy and morbid, subject to all the varying elements just indicated, that the practical physician is hourly required to deal. It must be already apparent to each one of you, that morbid action or disease;—is not a fixed uniform process to be successfully combated, according to arbitrary rules embodied in text-books or the *ipse dixit* of oral teachers; but that it is an intricate and ever varying process, in accordance with the numerous and varying influences under which it occurs. To be ready at all times and under all circumstances of life,

with but a moment of warning; to comprehend clearly the special character and tendency of each individual case of disease, with the bearing of the mental and physical circumstances immediately connected with it, requires a mind developed by long cultivation; rendered acute and logical by rigid and systematic discipline; and well stored with the facts and principles of all the natural and physical sciences. To these qualities of mind, should be added the full and consciencious appreciation of the fact, that at every step the practising physician is exerting more or less influence on the lives, health, and happiness of those around him, by which alone he will be prompted to an unfaltering application of those qualities in all the vicissitudes of a laborious life. Such, gentleman, is a very brief glance at the nature and objects of medical study, and the mental attainments and qualifications necessary for its successful prosecution. And permit me here, to earnestly express the hope, that if any one of you have entered upon the study of practical medicine, with less mental qualifications and acquirements than I have indicated, you will at once abandon the enterprise, or immediately commence a dilligent course of collateral studies for suplying existing defects. For there is no one thing that exerts a greater influence in diminishing the practical usefulness of the profession, and in lowering its reputation in the estimation of the people generally, than the deficiences in preliminary education and mental discipline, which characterize a large proportion of those who commence the study of medicine. It is useless to plead want of time and limited pecuniary resources, for in this country of free schools and cheap books, the young man who has not energy and perseverance enough to obtain a suitable preparatory education, when its advantages are fairly stated to him, certainly has not those mental qualities necessary to make him either an honorable or a useful member of a profession so responsible and laborious as that of medicine. It is equally futile to point, as is often done, to a few noted examples in medical biography, consisting of men who entered upon the study of medicine without preliminary education, and yet arose in after years to the highest positions, not only as practitioners,

but also as teachers and authors; for if the lives of those men are carefully examined, it will be found that every one of them were obliged to supply their early deficiences by sedulously pursuing the study of collateral branches amidst all the embarrassments of their earlier years of professional study and practice. Let no one infer, from these observations, that I would restrict the study of medicine to the sons of wealth or the graduates of literary colleges. On the contrary, it matters not whether the devotee of medical sciences comes from the hovel or the mansion; from the plough, the last, the anvil, or the tailor's bench; and it is immaterial whether he gains his knowledge of elementary sciences with the herds of the field, in the lonely garret, or in the classic halls of a college, provided he brings to the study of medicine that mental development, discipline, and elementary knowledge, which will enable him to do justice to himself, honor to the profession, and good to the community in which he may live. While the previous occupation, the time and place of preliminary education, &c., are matters of indifference, the education itself, coupled with the requisite mental development and discipline, is of paramount importance, both to the student himself and the profession whose ranks he proposes to enter. Without it, he will not only find great difficulty in comprehending clearly many of the most important topics embraced in the different departments of medical science, but he must either remain, through life, a mere routinist, dependent entirely on his teachers and his text-books for his opinions and even his formula, or he must spend all the leisure hours of the early years of practice in such collateral studies as will supply his primary deficiencies. In doing the latter, he may attain a fair position in the profession and a deserved reputation in the community, but he will rarely become a successful investigator of medical science, simply because he has been compelled to use the very hours which should have been devoted to original medical inquiries, experiments, &c., for such collateral acquirements as should have been attained before the first medical book was taken in hand.

Another topic, to which I would direct your attention here,

upon the threshold of the course of instruction before you, is the danger of allowing opinions to be influenced by prejudice and popular sentiment, rather than by facts and logical deductions. That fashions, or mere popular sentiments, have an influence over medical opinions and practice, is apparent to every careful observer. A reliable history of all the great medical theories of the past, and of the introduction and progress of almost every new remedy, will illustrate this. Without looking beyond the limits of our own generation, we can remember when the doctrines of irritation and inflammation, as taught by Dr. Rush and his contemporaries, were popular both in and out of the profession; and when under their influence, an ordinary headache was deemed sufficient to require a free bleeding from the arm, and every patient with fever, characterized by increased temperature of the surface and acceleration of pulse, was rigidly confined to water-gruel and mucilage drinks. Such practice at the present day would be regarded as almost barbarous. And yet the depletion, starvation, and refrigerants, so indiscriminately used then, were little, if any, more unphilosophical than the stimulants and rich food now quite as indiscriminately urged upon patients whose feverish condition, checked secretions, and consequent deficient gastric juice, render them incapable of either digesting or assimilating. If the past generation gave physic for every case of constipation, without inquiring whether it depended on deficient secretions or merely deficient peristaltic motion; a full counterpart may be found in the present fashion of prescribing cod-liver oil or Bourbon whiskey, or both, for almost every case of tubercular phthisis, and in every stage of its advancement.

The medical student should be constantly guarded against adopting opinions or practices merely on account of their popularity. On the contrary, he should dilligently seek for the *facts* pertaining to every subject that occupies his attention, and discipline his mind to the task of independently deducing such conclusions for his guidance, as a careful comparison of all the facts will justify. The cultivation of such a habit will also constitute his most effectual safeguard against hasty generali-

zations, or the deduction of rules of practice from facts too limited in number or imperfectly developed.

The absence of this safeguard has caused the pages of our medical literature to be filled with facts and cases, so imperfectly observed and recorded as to be of no real value, either as items for the upbuilding of our science, or as examples for the guidance of our practice.

A few thoughts on the present status of practical medicine may be both interesting and profitable to you at this time. Many have designated the present age as pre-eminently utilitarian in its tendencies; an age, indeed, of facts and figures applied to practical uses, and contrasting strongly with the metaphysical and theoretical tendencies of former periods. The designation is doubtless as correct, when applied to medical science and practice, as to any other departments of science and industry. The rapid progress of organic and analytical chemistry, and their application to the investigation of physiological and pathological conditions and products; the extensive application of the microscope to the same purposes, and to the unfolding of minute or primary anatomical structures; and the patient experimental researches of scientific men generally, have developed a mass of new facts in many departments, sufficient, not only, to overthrow the specious medical theories and systems of former times, but to make the mere work of observing and recording facts the prominent and popular feature in the mental operations of the present generation. Hence we find the pages of our medical literature filled with the details of cases, and the relation of facts, with only here and there an attempt at such a comparison and classification of them as to elucidate a principle, or justify a logical deduction of value. Indeed, many of the cases and so-called facts are themselves so imperfectly recorded as to be incapable of any important application. But while the development of facts, by observation, by experiment, by analysis, and by whatever means a thorough study of physical sciences can afford, constitutes the prominent feature in the medical literature of the last thirty years, yet it requires only a moderately careful examination to perceive, through it all, the preva-

lence and influence of certain leading theoretical ideas; each, through its advocates, struggling to subordinate to its sway all the rapidly accumulating facts in the domain of pathology and practical medicine. One of these ideas was manifested in an attempt to reduce the facts of pathology and therapeutics to statistical tables, and solve the problems involved by arithmetical calculations. Thus, the value of any remedy was sought to be determined by collecting a hundred cases, for instance, in which it had been administered, ascertaining the average results and comparing them with the average results of a similar number of cases in which the remedy had been omitted. This is called the "numerical system or method." If the vital properties and actions in each patient were the same; the external conditions acting as causes of disease, uniform; and the remedy to be tested always applied in the same stage of the disease, it might be possible to arrive at accurate conclusions by numerical calculations. But I need not remind you that the variable condition of vital action, in different patients, is only equalled by the ever changing character of the causes of disease; and consequently, that all attempts to solve problems in pathology and therapeutics, by mere numerical comparisons and estimates, will prove fallacious.

Another leading idea, which guides and, in some measure, controls the investigations of a large class of medical observers, is, that all vital actions, whether healthy or morbid, are the result of *cell*-influence. According to the doctrines of this class, not only all those actions constituting assimilation, nutrition, growth, and secretion, are the result of *cell-action*, but also the processes of tissue metamorphosis, and the evolution of all morbid products, whether in the blood or the tissues. This theory has resulted from the application of the microscope to histological investigations.*

A third leading idea or theory, which is exerting more influence, at the present time, than either of the preceding, is of chemical origin. It supposes that most diseases, especially of an acute character, and accompanied by the phenomena of

* See the works of Virchow, Addison, &c.

fever, arise from the presence and action of some poisonous or disturbing material in the blood. It also assumes that the primary action of such material is on the elements of the blood itself, sometimes causing the reproduction of the specific material, as in the well known contagious diseases, and in other cases simply undergoing expulsion during the disturbance which it occasions. These poisons may be introduced into the blood from without, or they may be generated by morbid action within. Some are supposed to produce their influence by catalytic or zymotic action, others by actual combination with some of the ingredients of the blood. You perceive this theory is not only of chemical origin, but its practical application necessitates an essentially humural pathology. Indeed the words "blood-poison,"—"blood-disease,"—"blood-degeneration,"—"zymosis," &c., are already of as frequent occurrence in the medical literature of the present day, as the words *concoction*, *fermentation*, *morbid humors*, &c., were during the reign of the ancient chemical or Arabian school of medicine.

A fourth theoretical idea, that still holds much influence, but which originated with the solidist school of a former period, is that which refers almost all morbid influences to a primary impression on the nervous system. The influence of this theory may be traced in all our works on practical medicine, from the days of CULLEN to the present time. Even those who embrace the more modern doctrines of blood-poisoning, still refer the most important resulting phenomena or symptoms, to the action of such poison on the nervous centres. From this enumeration of the leading theoretical ideas that hold more or less sway over the professional mind, at the present time, you perceive, that though we live at a period pre-eminently characterized as one of observation, of experiment, of cumulative facts, and the application of physical laws to the investigation of morbid conditions and products, there is still an effort, everywhere visible, to find some primary or fundamental physiological law, or condition of life and organization, which shall constitute the basis of pathology by affording a starting point for all morbid action. That none of the theories to which we have alluded, indicate

such a law, is evident from the fact that they fail to afford a satisfactory explanation of many of the most important morbid phenomena, familiar to every practitioner of the healing art. Thus, it is difficult to explain many of the changes that take place so rapidly on the occurrence of inflammation by the doctrines of cell-development or cell-action, as maintained by VIRCHOW and others of the microscopic school. It is still more dfficult to explain many of the symptoms and results of inflammatory and febrile diseases on the hypothesis of the chemico-humeral class of investigations.

The neurological pathology, which refers all morbid action to a primary morbid impression on the nervous structures, is no more satisfactory to the critical student than either of the others. A close examination of the symptoms that accompany the development of every attack of acute disease, will show the presence of something more than mere nervous depression or derangement.

This is fully acknowledged by Dr. WOOD, in the introductory chapter to his valuable work on the Practice of Medicine; but whether his discouraging conclusion that this "something more" is beyond the reach of human investigation, you will be better able to judge during the progress of the present course of instruction. It is true that each of these great leading theories afford explanations of facts and phenomena of great physiological and pathological importance.

The theory of cell-action and cell-development, beautifully explains most of the phenomena connected with nutrition, disintegration, reparation of tissues, morbid growths, &c.; but wholly fails when applied to the more rapid morbid changes observed in the phlegmasia, the fluxes, and the neuroses. So the chemico-humeral theory of zymosis or blood-poisoning, will satisfactorily explain many of the more important phenomena connected with some of the idiopathic fevers, particularly those called eruptive; but affords us no help in unraveling the nature of inflammation, or the structural changes involved in morbid deposits and growths. Like the ancient solidist doctrine of *irritation*, they are capable of only partial, instead of general,

application, and hence cannot afford a basis for a rational system of pathology. The influence of the several theories to which I have called your attention can be traced, not only, in that part of our professional literature relating to physiology and pathology, but equally so in that relating to therapeutics and clinical practice. As the doctrines of irritation, congestion, and inflammation, derived from the theories of exclusive solidism, led directly to the idea of *subduing* disease by active interference with the whole class of antiphlogistic agencies, so the chemico-humeral doctrines of the present day, lead equally direct to the idea, either, of antidoting the supposed zymotic poisons, or of simply sustaining the functions of the patient until the supposed poisons have effected their own specific changes in the system, and become inert or eliminated through the organs of excretion. It is not difficult for the observing physician to perceive that the tendency to regard diseases as specific morbid processes having a fixed or determinate course to run, has kept pace with the spread of the modern doctrines of zymosis or blood-poisoning. The theories of cell-growth and cell-action in the production of all morbid, as well as healthy changes, in the system, equally encourage the idea that such morbid changes, when once begun, are disposed to progress in accordance with fixed laws until the series of changes constituting any given disease are completed, when they cease spontaneously. In other words, there has been, during the last ten or fifteen years, a constantly increasing tendency to regard diseases as destined to run definite periods of time, passing through successive stages; and consequently, that the efforts of the physician, instead of being directed to the work of *subduing* the disease, should be mainly restricted to the work of palliating symptoms and sustaining the strength of the patient, until the morbid processes were completed and *nature* had effected the cure. Hence we find throughout the professional literature of to-day, a disposition to extal the powers and efforts of *nature;* to depreciate the curative power of drugs; and to substitute expectancy or positive stimulants, for the active antiphlogistic medication of the preceding generation. Such, gentlemen, is

the present status and tendencies of medical investigations and practice. During the course of instruction now before us, I shall endeavor to present the facts and principles belonging to the department of practical medicine, in such a manner as to develop, as far as the present condition of medical science will permit, a rational system of pathology and treatment. The oral instruction in the lecture room, will be abundantly illustrated by your opportunities for direct clinical observation at the bed-side, in the wards of the Mercy Hospital.

Selections.

THE MEDICAL MANAGEMENT OF INSANE WOMEN.

By HORATIO ROBINSON STORER, M.D., of Boston, Surgeon to the New England Hospital for Women.

Read before the Suffolk District Medical Society, October 1, 1864, and communicated for the Boston Medical and Surgical Journal.

II. Advisory Medical Boards requisite at Asylums.

In one of the April numbers of this Journal for the present year,* a series of papers was initiated upon the causation, nature and more rational treatment of insanity in women. My remarks were based, it was stated, upon extended observation, patient reflection, and a firm belief that the subject, though hitherto neglected, might be made to afford in practice important results. The few months that have since elapsed have been strongly confirmatory of every assumption then made; additional cases of the kind alluded to have been sent to me for examination and for treatment, and my views have been endorsed by gentlemen much older in the profession as in accordance with their own experience; and I acknowledge with pleasure the cordiality with which my attempt to elucidate a question among the most delicate and withal among the most important of those pertaining to obstetrics, has been so generally received.

The ground I have taken regarding this subject, is briefly the following:—

1. That the insanity of women is, in a large proportion of cases, of reflex character and origin.

* April 7, 1864, p. 189.

2. That in by far the majority of these, it is unattended by organic cerebral change; and therefore,

3. That like all other of the manifold reflex disturbances of women, it may be prevented, treated, cured by medical and surgical means.

Upon the above as a basis, I have now to offer certain practical suggestions concerning both the public and the private management of insane women. Of these, but a single one will be considered in the present communication.

To the point alluded to I have already called the attention of the profession at the late meeting of the American Medical Association, at New York; my remarks being embodied in a paper upon "The Relations of Female Patients to Hospitals for the Insane." This communication, having received the commendation of the Section of Practical Medicine and Obstetrics, was by it presented to the Association in Committee of the Whole, with the result of unanimous approval, the resolutions passed by the Association being as follows:—

"*Resolved*, That in the opinion of the American Medical Association, it is expedient that there should be attached to every public hospital for the Insane, one or more consulting physicians, who may be consulted at the discretion of the Superintendent; such measure being for the interest of the hospital, its medical officers, and its patients.

"*Resolved*, That a copy of the above resolution be transmitted to the Board of Trustees of each of our public hospitals for the Insane, and also to the Secretary of the Association of American Superintendents, with the request that it may be endorsed by that body, and the act proposed be urged upon the respective boards with which its members are officially connected."

It is the object of the present paper summarily to explain the advantages and necessity of the proposed measure, as comprising part of a systematic and more rational treatment of insane women; premising that with the single exception of Dr. Ray's most excellent institution at Providence, there is no asylum in this country provided with an advisory board. The so-called medical visitors attached to the Hartford Retreat are not appointed with reference to special professional consultation, while at the McLean Asylum, as is also the case at Bloomingdale, the consulting physicians and surgeons attached to the general hospital, have nothing whatever to do, officially, with the insane department. If any of these gentlemen have ever been called upon for advice, it has merely been as an act of courtesy and not as a right. They have not been selected with

reference to any pre-eminence in this specialty, and they would probably none of them lay the slightest claim to be considered "expert" regarding insanity.

The advantages, as regards female patients, of an Advisory Board of Consulting Physicians at Insane Asylums would, I conceive, be several; applying—

I. To the Patient,
II. To the Hospital,
III. To the Superintendent,
IV. To the Profession, and
V. To the Community.

I—The benefit of an advisory board to patients will, in the case of females, be found to be extreme. My assumptions as to the nature and truly reflex character of the larger proportion of their psycho-pathological manifestations being granted, as must be done by every observer who has carefully studied these cases obstetrically (and this is the touchstone to which all the diseases of women must be subjected), it follows that, for the purposes of proper diagnonosis and of successful treatment, the usual measures resorted to at asylums in the case of insane women are wholly inefficient. To efface the effect in these cases present, we must reach its cause—persistent and active, in some instances even more active, after the world with its cares and its turmoil has been shut out. Seclusion does not restore a displaced womb; absence from friends, except in some cases from a husband, does not cure an inflamed or ulcerated cervix; the prohibition of letter-writing will not control suppression or redundance of the catamenia, nor a rigid diet the vagaries of an irritable ovary. What is required is that the case, whenever doubtful, should be carefully examined and thoroughly understood. This, as our asylums are at present conducted, and speaking in more than general terms, is never done with the female patients; it is not even attempted. The reasons of such seeming negligence I proceed to explain, and to suggest its cure.

The medical examination of an insane woman is not always easily made; and at an asylum is attended with certain risks to the medical attendant, existing in private practice with insane patients, unless due precautions are taken, but enhanced at asylums. I refer to the chance that the examination may appear to the patient's disordered mind a very different piece of business from what it is; and that it may be so reported to other patients and to her friends. Perhaps, indeed, the misconception may remain a sincere and persistent belief, even in case of

eventual cure. These risks are in reality, as things now exist, far more tremendous than might be imagined; but when the charges are recollected that time and again have been made and pressed to trial in the courts by females whose delusions have been merely the effect of the transient administration of an anæsthetic,* it will be seen that with women who are really and permanently insane the danger is increased.

How can these difficulties, these risks, be avoided and overcome? So far as mere objections of the patient are concerned, or her forcible resistance even, etherization is sufficient, or merely the narcotization still so common for purely therapeutical ends in our asylums; but for protecting the medical officer's reputation and that of his hospital, no measure that has been or can be proposed will suffice, save an advisory board for medical consultation. I know that examinations may be attempted in the presence of junior medical officers or of a matron, but these are all parties of identical interest with the Superintendent; they are his subordinates, usually dependent for their places upon his good will, and therefore their presence and their evidence are without that moral weight which can alone be protective to such an examination as is required.

There has widely obtained an opinion, still existing to a certain extent as must be allowed by every candid observer, that asylums for the insane are rather houses of detention than hospital for cure; an idea based upon the prison treatment and discipline of these institutions in former days. Everything that can be done to disabuse the public of so great an error, or to prevent its having the slightest foundation in fact, is in every respect work well worthy our attention. For a large class of their patients, probably on the average fully one half, how can asylums be hospitals for cure, if the first step towards ascertaining the predisposing and exciting cause and true character of the mental disease is never taken? The apprehensions concerning the unnecessary or wrongful detention of female patients that have so often found vent in our journals and in the public courts, have generally been without reason or even show of reason as regards intentional wrong. Superintendents, there is every ground for believing, are men of honor, anxious to do their whole duty, and above fear or favor. But are there no reasons for fearing that in many, perhaps in all our asylums,

* For cases in point, that of Dr. Beale, of Philadelphia, and others, I refer to this Journal, November, 1858, p. 287; Philadelphia Medical Examiner, December, 1854; Western Law Monthly, April, 1860, p. 183; Wharton & Stilles's Medical Jurisprudence, 418, § 443.

female patients may occasionally be unintentionally detained, whose cases admit of relief or cure? The answer is evident enough from the statements already made, from the admissions of Superintendents themselves, from the results of similar cases in private practice to whom, unlike those in asylums, appropriate treatment has been applied, and from those instances of cure, however rare, that from time to time have spontaneously and accidentally occurred at asylums, where after many years, perhaps of no improvement at all, the grand climacteric has been passed, or a tumor become checked in its growth, or an old indolent pelvic abscess found vent, or the long-checked catamenial fountains again obtained for themselves effective discharge, and the mental disturbance that had been dependent upon the central lesion has disappeared. Such cases have been put upon record, but their true value and importance have not been recognized.

The public apprehensions to which I have alluded have some influence, how much or how little none of us can well appreciate, in preventing the sending of patients to insane asylums. Now it is conceded by all familiar with the subject, that the cure of every form of insanity, secondary and reflex, as well as primary and organic, depends in a great measure upon the earliness of the period at which proper treatment is commenced. Asylums are, or certainly should be, essentially hospitals for cure. Everything that we can do to make them so is a threefold advantage to the patient; it increases her chance of being sent at all to the institution by her friends, of being sent sufficiently early, and last, but not least important, of her being treated *secundum peritissimam artem.*

II.—I have said that by a consulting board taken from gentlemen in private practice, and therefore familiar with the details of obstetric or gynæcal management, these various difficulties as regards doing the best for the welfare of female patients would be likely to be overcome. Would it not also be of decided advantage and aid to the superintendent, looking at the question as it involves his best interests alone, and putting aside the satisfaction that would naturally accrue from the feeling that everything was being done for his patient that could be suggested by science or art? We are all of us familiar with the vexations to which of late years our own superintendents have been constantly subjected in courts of law. In the cases to which I refer, many gentlemen have been summoned from civil practice to give testimony for or against the managers of asylums. In a portion at least of these instances, there is reason

to believe that there has existed one or another form of functional uterine or ovarian derangement which, had its existence and character been accurately determined, might of itself have thrown such light as satisfactorily to settle the question of sanity or insanity, of detention or non-detention, of permanent disability or of cure. In such a case were the disease to have been detected and properly treated, it ts probable that the delusions involved might have been made to permanently disappear, and an immense amount of scandal and professional disparagement avoided.

These are questions of direct interest to the profession as well as to any individual superintendent. Gentlemen have more than once acknowledged to me that they felt strongly tempted to retire from a position they had filled with usefulness and honor, merely because of the annoyance to which they were thus periodically subjected; and in case of a vacancy arising at any hospital, as has lately been the case at Northampton, it becomes a matter of vital importance to a candidate for him to decide whether he will voluntarily encounter the almost certain ordeal at law, to which he may be subjected by any one of the richer class of his female patients.

To superintendents the appointment of an advisory board would prove at once comfort, assistance, and safeguard. The probability of this was most courteously allowed by Drs. Tyler of the McLean Asylum, Walker, of South Boston, Jarvis, of Dorchester, and Choate, of Taunton, at the hearing granted the Commission in Insanity during the session of the Legislature of Massachusetts just ended; and its realization in practice was affirmed on the same occasion by Dr. Ray, of Rhode Island—the only superintendent in this country, from having an advisory board, placed in a position to express a competent opinion concerning his female patients. One of the members, indeed, of that very board, Dr. Mauran, of Providence, took occasion at a subsequent period, during the late session of the American Medical Association, at New York, to express in the most unqualified manner, from actual and extended experience, his approbation of the measure now proposed. Its necessity is indeed so palpable that we may well wonder that the change has not long since been effected. That it is still to be accomplished alone necessitates any extended argument.

I might easily adduce still further evidence of the character of that now given, but will content myself with a single line. In a letter dated August 3d ult., Dr. John S. Butler, the accomplished Superintendent of the Retreat at Hartford, writes

me as follows, concerning a patient now under my charge:—"I always suspected that there might have been some uterine irritation or disorder acting perhaps as the exciting cause, but under all the embarrassing circumstances of our relative positions, I could not satisfy myself. Situated as I am here, I could not make such an examination as was necessary for a full understanding of her case; you can much better insist upon one than I could."

Could any testimony be more conclusive than this?

III.—Are there advantages to the profession from an advisory board, over and beyond those that I have spoken of as accruing to the superintendents themselves? Even here it must be allowed that there is an affirmative answer.

At the present time there are outside the asylums very few gentlemen skilled in psychiatry, very few even who lay claim to being psychical experts. The truth of both of these statements is evidenced at every important trial that involves questions of mental unsoundness. Few in private practice have opportunity of directly comparing, upon any large scale, the various phases of insanity; few, therefore, become directly and specially interested in their study. At the present time, so great is the scarcity of experts, that the resignation or death of the superintendent of any large asylum strkes with dismay the board of trustees of nearly every other similar institution in the country, lest the new incumbent to be chosen should be stolen from themselves. This is no exaggeration; the writer happens within the present season to have been semi-officially consulted concerning a vacancy in one of our asylums, and he knows very well what names were sent to him for the expression of his opinion, and the remarks concerning them that were made to him by trustees who possessed for the time being the services of the gentlemen referred to.

Now I contend that the establishment of advisory boards would not only tend to stimulate physicians to more frequent study of mental disease; it would afford a larger field from which to select gentlemen to fill the responsible positions of superintendents and trustees. It is very evident that such would necessarily be the case. No physician would be likely to be apointed to the advisory board who, with fair reputation in general practice, had not shown some interest, be it more or less, in the special department now under consideration, and had not a certain amount of familiarity with the innumerable mental vagaries of nervous women. Opportunities would of course, from his position, be likely to become frequent for further research, and

the fascinations ever acknowledged to attend the study of mind diseased would tend to perfect him therein. As a single instance of what would naturally and generally be the result, it may be mentioned that shortly after the report of the late Massachusetts Commission in Insanity had been rendered, it was urged upon two of the three gentlemen constituting that board, that they should allow their own names to be used as eligible to the vacant superintendency of the Northampton Asylum; upon the third of their number similar arguments would have been used had he been a physician. It is unnecessary to add that in one at least of these instances, such position would have been incompatible with other though perhaps not higher aims; for I can conceive of no professional office with greater responsibilities, more constant call for all the eliments of one's better nature, more opportunity for making a deep and grand mark upon the tablet of the time, than the superintendency of one of our New England Hospitals for the Insane.

It may be alleged that there are few men fitted to be chosen as medical advisers to an asylum. This remark is undoubtedly true, but it depends entirely upon the profession how long such general incompetence shall exist. Already a door has been opened to the needed reform by the establishment of Dr. Tyler's class at the Harvard Medical School, an example soon to be followed, we trust, at all the colleges in the country. Towards such recognition of the claims of mental disease upon the profession at large, the measure I now propose would greatly tend, and on the other hand the more thoroughly mental disease becomes understood, the more incomprehensible it will appear that this greatest of elements towards the understanding and efficient treatment of female insanity should have been so utterly and persistently lost sight of.

V.—To the community at large, need I say, the reform proposed is of incalculable importance. As a mere matter of political economy, and to prove the worth in dollars and cents of every productive worker restored to reason, there were presented by the late Massachusetts Commission in its report to the Legislature some startling calculations and conclusions respecting the results attainable and already attained.* The statements to which I have referred, prepared with the minuteness and accuracy for which he is so celebrated, by Dr. Jarvis, of Dorchester, were presented more especially with reference to the male sex; but as regards the cost of support, and the pecuniary gain to friends and the State effected by cure, they equally apply to

* Mass. Senate Doc., 1864. No. 72, p. 5 et seq.

the case of women; while the chance of cure in women, provided only the proper treatment be afforded, is probably much greater than in men.

I have spoken of doubtful cases of insanity in women, which of late years have largely occupied the time of our courts and have kept the public mind excited and troubled. The community would be benefitted by the prevention of such trials or their more summary settlement, which can only be done by the advisory board now proposed.

I have referred to the danger of libellous charges against superintendents, in case they do their whole duty by the female patients entrusted to their charge. In the advisory board we have an efficient safeguard.

I have mentioned the increased confidence that would be felt in asylums should they be provided with such a board, and the larger proportion of female patients that would probably be sent for treatment at an earlier and more curable stage of the malady —in both respects a benefit being conferred upon the community—and the advantage that would accrue to it from a more general interest being taken in these diseases and greater proficiency in their treatment attained by medical men. Can we doubt that the board will soon be added to the management of every hospital?

In my communication upon this subject to the American Medical Association, I urged that the appointment should in every instance be an honorary one; as thereby tending to elevate the profession and the character of the services rendered. To my positions on this point, exceptions were taken by Dr. Griscom, of New York, upon the ground that physicians in private practice are at the best ill paid, and that by no one, more especially by the Association representing the profession at large, should action be taken tending to the establishment of further gratuitous labor.

While I strongly differed from the conclusions to which Dr. Griscom would press his argument, the resolutions originally offered to the Association were so far modified by passing this point in silence, as to leave it discretionary with trustees in each instance to pay or not to pay a salary to members of the advisory board; it will have been noticed that in this form the resolutions were unanimously passed.

In my own opinion, premising that the amendment of Dr. Griscom had been fully urged by him at the preliminary discussion before the Section of Practical Medicine and Obstetrics, and had been there rejected by a very large vote, the Section

adopting and presenting the resolutions in the form first offered, as their own—in my opinion, I would still contend that these appointments should in every instance be strictly and purely honorary. I am led to this opinion by the following reasons:—

1st. Such appointments at ordinary general hospitals are always of this character; the only instance within my own personal knowledge in this country where consulting physicians or surgeons receive any emolument being at the General Hospital at Quebec—an example of short-sightedness on the part of its managers, or of parsimony on the part of its attendants only equalled by the whole detail of management of the Provincial Lunatic Hospital at Beauport, near that city. To the utter failure of this last-mentioned institution, the only one in the Lower Province, to accomplish its end, I referred in my remarks before the Association. It is a subject to which I may allude in an other communication, so necessary is it that the evil there existing should be exposed and abated.

If it is contrary to the ethics of the American Medical Association for physicians ever to give gratuitous advice in cases where a trifle could possibly be paid, then do we all of us who hold any honorary appointment at an hospital, daily and wittingly infringe the laws of that code; and we should all—among the number Dr. Griscom himself, one of the Physicians to the New York Hospital—be ignominiously expelled from the Association. That the gentleman referred to still holds his official position, and has not offered to resign it, is sufficient proof that his argument before the Association was so far fallacious as it was insufficient to control his own action in a matter similar to the case in hand.

2d. An honorary appointment is better for the interests of the hospital. Putting aside the fact that our public hospitals for the insane are in greater measure of a charitable character than remunerative, a large proportion of their patients being paupers, it is evident that the community, so sensative upon the point of possibly unnecessary detentions, would be more at ease with an unpaid than a paid advisory board; there would seem less likelihood of collusion, more probability that its action would be fair and unbiased.

3d. It is also better for the interests of the gentlemen composing the board. I acknowledge (as who does not?) the indirect advantages pertaining to an hospital appointment; that it is generally supposed to be conferred upon those by taste or previous education best fitted to fulfil its duties. But beyond these considerations, it is certain that the adviser who is unpaid

at once holds a much more independent position, and that for this reason his dictum has much greater weight. Unpaid the position is much more likely to be unsought; and therefore, conferred, it gives the greater honor.

4th. And finally, an honorary appointment is also a better one for the community. Every salaried medical office is likely to become the object of contention and political intrigue, and therefore to be filled by incompetent persons. That such offices do from time to time happen to be occupied by the right men seems rather a matter of accident than of necessity, and in the nature of things it is hardly to be expected.

It should of course, as I have intimated, be left entirely to the discretion of the superintendent in all cases as to when and to what extent such a board as I have suggested should be consulted by him; the object being to offer him every opportunity of curing his patients, without in any way shackling his judgment, and above all to put it into his power to treat his female patients within the hospital as understandingly, as judiciously, and as thoroughly as the same women would be treated were they sane and at their homes.

The above remarks are commended alike to the attention of superintendents, of trustees, and of the profession at large. In my next communication upon the subject I shall enter into matters of stricter medical and surgical detail.

ON NEURALGIC AFFECTIONS FOLLOWING INJURIES OF NERVES.

By J. MASON WARREN, M.D., Surgeon at the Massachusetts General Hospital.

Injuries of the nerves belong more especially to military surgery, and have therefore, until very lately, been but little studied among us. The information given in the common handbooks is also quite meagre, and eminent authorities differ widely upon important points both of prognosis and treatment. I have thought it worth the while, therefore, to collect the opinions of a few leading surgeons upon this subject, and to compare their teachings with the results of my own experience in a few cases which have recently been under my care.

The immediate effects of the division or injury of a large nerve, are the loss of sensation and of motion, and a diminished power of resisting changes of temperature which would ordina-

rily cause no inconvenience. Severe pain is also a very common symptom, but is not always observed until after the lapse of a certain time after the receipt of the injury. The loss of sensation and of motion may be either temporary or permanent, as might naturally be expected, but the connection between the precise nature of the injury and the subsequent phenomena has not often been marked out with so much exactness as could be desired. I shall confine myself chiefly to the question of the treatment of neuralgia following injuries of the nerves, commencing by a few quotations from good authorities.

"The best means of mitigating the pain," says Mr. Guthrie (*Commentaries on Surgery*), "independently of the application of warmth, is by the application of stimulants to the whole of the extremity affected, followed by narcotics." The particular applications suggested are tincture of iodine or of cantharides, oil of turpentine, croton oil, liquor ammoniæ, veratria, &c., using them "of such strength as to cause some irritation on the skin, short, however, of producing any serious eruptions." He would follow these stimulant remedies by opium, belladonna, or hyoscyamus applied in the form of an ointment; or by the tinctures of the same narcotics or of aconite applied on linen; he also suggests the employment of aconitia made into an ointment with lard in the proportion of one grain to a drachm.

Dr. Hennen (*Principles of Military Surgery*, Chapter XI., on Injuries of Nerves), states that "mechanical injuries of the nerves are entirely beyond the power of art to relieve effectually, but (that) they are objects of great curiosity, and illustrative of many important symptoms that occur in the course of practise." He mentions a secondary paralysis which "very frequently takes place without any immediate injury of the nerve, as in those cases when a ball has passed so close to a large one, or the plexus from which it proceeds, as to occasion an inflammation and consequent thickening of the neurilemma or investing membrane; or when, in the more distant transit of the ball, the tube formed by its passage swells to an extent sufficient to press on the nerve or plexus." In a celebrated case reported by Dr. Denmark, (*Medico-Chirurgical Transactions*, vol. iv.), in which the patient was tormented by a severe neuralgia, corresponding to the parts supplied by the radial nerve below the elbow, amputation was performed with complete relief of the pain, and on dissection the cause of the trouble was discovered in a bit of lead imbedded in the radial nerve. In a comment on this case, Dr. Hennen approves the course adopted, "although the nature of the lesion was suspected previous to amputation, and indeed almost demon-

strated by the symptoms and site of the wound." His objections to any attempt to dissect out the nerve and remove the foreign body, are "the extent to which the thickened and diseased state of the investing membrane of the nerves may reach; the certainty of greatly lessening, and perhaps eventually destroying the motion and sensibility of the parts to which they are distributed, by cutting off the communication with the sensorium; the contracted or distorted state in which the limb generally is; and the possibility of exciting universal and highly dangerous commotion of the system." He further states that while "the total division of a partially wounded nerve is the only operation recognized by modern surgery, the experiment is both hazardous and uncertain; he therefore confines himself to venesection, with emollients to the parts."

An interesting case of traumatic neuralgia, lasting several months, finally recovering without an operation, reported by Mr. Longmore, in Mr. Holmes' *System of Surgery*, closely resembles several of my own cases reported in this paper, and will be cited in connection with them to complete the history of this interesting affection.

In the chapter in *Holmes' Surgery* on the Diseases of Nerves, Dr. Brown-Séquard has given an able *resume* of various reflex affections following injuries of the nervous trunks and large branches. For the treatment of all these affections, whether taking the form of epilepsy, tetanus, neuralgia, paralysis, &c., he dwells chiefly upon local measures, and among these he gives the preference to the artificial section of the injured or irritated nerve between the brain or spinal cord and the part of the nerve which is altered. "When there is any chance of a persistence of the irritating cause after the time necessary for the reunion of the parts of the divided nerve," he states that "an excision of an inch or two, which will retard reunion, must be made instead of a simple division." He states also that owing to changes which may take place in the nutrition of the nerve above the part originally affected, it may sometimes be proper to divide the nerve at a point considerably higher than would otherwise be necessary, in some cases operating "even as near the nervous centre as safely possible." Besides these cases requiring division of the nerve, there are others in which "all that is necessary is to gain a few days to allow a wound to heal up." In such a case he recommends "to lay bare the nerve above the wound, and to drop sulphuric ether upon it, which operation, especially if repeated, will render the nerve for many days quite unable to transmit any irritation from the original

wound." "Amputation of a limb (he says) should never be resorted to with the view of curing reflex epilepsy, tetanus, &c., unless of course this operation happens to be necessary for another purpose." As the next best local means after neurotomy for combating these affections, he advises the employment of "subcutaneous injections of narcotics, just above the wound, or on the irritated nerve, together with applications of emollient and narcotic lotions or poultices on the wound itself." The dose recommended for subcutaneous injection is half a grain ($\frac{1}{2}$) of morphia or one-sixtieth of a grain of atropia; he also makes the important observation "that in many cases of reflex (nervous) affections, the most powerful narcotics, especially opium, are borne in large doses, without any poisonous effect."

The proposal of the plan of treating nervous affections of this kind by neurotomy involves the whole question of the repair of injured and divided nerves, a subject not very fully discussed in works on surgery, and therefore not very familiar to practical surgeons. I have thought it proper therefore to collect such facts as I could upon the subject both of simple division of nerves and also of division with the excision of a longer or shorter portion of the trunk.

As regards the question of reunion of the two ends of a divided nerve, there is no doubt that such a result often occurs. A sufficient proof of this fact is seen in the restoration of nervous action in the trifacial nerve even after the removal of a portion of one of its larger branches for facial neuralgia,* also in the occasional reproduction of the nerves in the foot of the horse when divided or partially excised to conceal or relieve certain forms of lameness. The same fact is also proved physiologically by the experiments of Cruikshank and Haighton upon the vagus of dogs, and anatomically by Meyer, Swan, Tiedemann, and others, who have actually traced the new nervous

* In two cases where I have removed a portion of the inferior maxillary nerve, amounting to about half an inch, for the relief of tic douloureux, regeneration of the nerve with full restoration of its functions afterwards took place. In the first case, operated on by Dr. J. C. Warren, the disease was relieved for six months, when the pain returned in the same spot beyond the excised portions of nerve. A year after the first operation I trephined the bone and excised a second portion of the nerve with permanent relief. In the second case, which is published in the *Transactions of the Boston Society for Medical Improvement*, June, 1858, the lower jaw was trephined near the angle, and half an inch of the nerve removed for a tic douloureux of eight years' duration, confining the patient for most of that time to her couch. This patient was entirely relieved for about a year, at the end of which time sensibility had become almost wholly restored to the parts beyond. The violent and persistent neuralgia has not returned, although occasional paroxysms are felt at the same spot as before.

filaments in the cicatricial tissue, uniting the cut ends and filling the void caused by the excision of a portion of several lines (and in one case nearly an inch) in length. Clinical observations bearing upon the same point are recorded by various authors. Mr. Syme, in his *Treatise on the Excision of Diseased Joints** (Case VIII., page 88), gives a remarkable case in which the ulnar nerve was wholly divided at the elbow in the operation of excision of that joint, and in which the functions of the nerve were perfectly restored in the course of a few weeks. A subsequent dissection of the arm less than a year after the operation, revealed the fact that perfect union of the cut ends of the nerve had taken place, and that the nervous filaments could be traced from both ends into the intermediate new tissue and apparently also from one end to the other. In a similar case reported by M. Roux, a portion of the ulnar nerve was actually cut away, but in the course of a year sensation had entirely returned, and when the patient was examined fourteen years after the operation the sensation was as perfect as in the other arm.

A very interesting case of union of the median nerve, after division at the wrist-joint by a circular saw, occurred in the practice of Mr. Stanley, and is admirably reported by Mr. Paget. (*Lectures on Surgical Pathology.* Lecture XII.) In this case sensation began to return within ten days or a fortnight, and was nearly complete in the course of a month. In another similar case, also quoted by Mr. Paget, in which the injury was inflicted with a chaff-cutting machine, the subsequent history was much the same as in the boy treated by Mr. Stanley. These cases are cited by Mr. Paget in illustration of a mode of repair which he calls primary union in contradistinction from secondary union, which takes place by the formation of new connecting substance, and generally requires twelve months for even a partial restoration of the nervous function.

In view of these facts it is important to inquire into the propriety of dividing the nerve as a remedy for traumatic neuralgia. In answer to this question, we may state that if the nerve is simply divided, sensation will probably return before the tissues implicated in the original injury have had time to recover their normal condition, and that, therefore, the operation will afford only very transient relief and may have to be repeated several times. If, on the other hand, a portion of the nerve is excised,

* For the reference to this and the following case I am indebted to Dr. R. M. Hodges, who has also called attention to them in his valuable and interesting paper on Excision of Joints.

the restoration of the nervous function will be very much longer in taking place, but there will also be great danger that the repair will be incomplete, or even that it may fail altogether, and thus entail permanent loss both of sensation and of motion. The deliberate removal of a long section of the nerve with a view to the permanent abolition of its functions can be but very rarely indicated, and then only as a "dernier resort," as the possible alternative of amputation.

The rational treatment of these neuralgic affections seems to me to be based on the fact that their natural tendency is to recovery, if only we can keep the patient comfortable, and thus induce him to wait for this tardy relief. This can only be effected by division of the nerve or by the use, either local or general, of narcotics. The protracted use of opium internally in sufficient quantity to relieve the pain, will almost inevitably exert a most pernicious influence on the health, while mere local applications to the skin seem to have very little effect. The great benefit which has been derived from the use of hypodermic injections of morphia for ordinary neuralgia, naturally suggested the propriety of trying them in this affection, and the success which has attended the experiment has been most gratifying.

The following cases of severe traumatic neuralgia, which have lately occurred in my practice, serve to throw light upon certain points in the pathology and treatment of this painful affection. In all these cases the injury seems to have been to the tissues surrounding a nervous trunk rather than to the nerve itself, and the immediate cause of the painful affection which followed would seem to depend upon the effusion of inflammatory products within the dense fibrous neurilemma, thus entangling the nerve in a mass of cicatrical tissue, perhaps also compressing its fibres. The highly favorable result in Case I. may be readily explained by the well-known law of development of new reparative material, by which it becomes gradually assimilated to the proper tissue of the part in which it is deposited. The dissection made in the course of the operation showed that the nerve was then firmly glued to the surrounding tissues, and its release from these connections was followed by perfect relief of the pain, which, however, returned in a diminished degree as soon as the process of cicatrization had again commenced. The pain was then controlled during six months by the daily use of hypodermic injections of morphia, and at the end of this somewhat protracted treatment the neuralgic affection was found to have disappeared, and the nerve had so far recovered its normal

condition as to conduct ordinary sensations in a very satisfactory manner. The second and third cases are equally interesting as showing the powerful effect of the narcotic injection, in the one case in relieving the pain, and in the other actually curing it. The case of Mr. Longmore is also added to show the important part which time plays in the cure of all such cases.

Case I. *Severe Neuralgic Affection following a Gunshot Injury of the Median Nerve.*—In the second battle of Bull Run, Lieut. A., of a N. H. regiment, was struck by a ball on the outside of the middle of the arm. The ball passed obliquely through, traversing the biceps muscle and coming out on the inside. For two or three days he was exposed to the weather, lying under the piazza of a house, having but little food, and with his hand constantly wet with the rain which was falling. The hand was benumbed, but he suffered somewhat with a sensation of heat in it, which was partially relieved by keeping it exposed to the wet. There was no pain in the wound itself. Shortly after he was removed to Washington, where he first experienced very severe pain in the whole hand, but more particularly in the part of it supplied by the median nerve. I saw him about a fortnight after the receipt of the injury. He was then in constant and severe pain in the hand, so much so as to require to be kept more or less under the influence of morphia, which he was taking to the amount of a grain a day. On examining the point at which the wound was received, a puckered eschar was seen with an induration extending deeply into the belly of the biceps muscle to which the skin was adherent. The situation occupied by the vessels and nerves on the inside of the biceps was also enveloped in a mass of indurated tissue. The first idea suggested by this state of things was to cut down upon the nerve, to divide it. It seemed, however, possible, by the gradual change going on in the tissues, that a healthy action might ultimately be set up, and at the same time, the indurated tissue surrounding and compressing the nerve might be absorbed, finally relieving the nerve from pressure. The question was whether the sufferings of the patient could be sufficiently mitigated by artificial means to allow of the adoption of a temporizing course. He was advised to place the limb perfectly at rest, wear it inside of his clothes, next the body, and to have a sleeve made of sheet India rubber to envelop the lower part of the arm, which covering was to be removed from time to time, the arm exposed to the air and washed with soap and water; he was directed to discontinue the use of the rubber sleeve if much irritation was set up in the skin, and to envelop the arm in

flannel instead, which he had at all times found necessary owing to the great reduction of temperature. He went home to New Hampshire, and followed this plan for three or four weeks. At the end of that period he came to me again with the desire of having the nerve divided, as his suffering had become so intolerable, in spite of the use of opiates, as entirely to deprive him of rest. Before resorting to an operation on the nerve I determined to try the effect of subcutaneous injections of morphia. Half a grain of sulphate of morphia, in solution, was injected deep under the skin of the forearm twice a day. He was at once placed in a state of comparative ease, and the evening injection gave him a good night's rest, such as he had not enjoyed for many weeks. This plan was followed up for a month with equally good effects; his digestion was not in the least affected by the use of the morphia, and he gained considerably in flesh. If, however, the dose was omitted, the pain became as bad as ever. It was therefore decided to perform an operation. An incision of three inches in length was made over the inner edge of the biceps, and the integument dissected on both sides separating the cicatrices, caused by the entrance and exit of the ball from the subjacent tissues. The indurated mass which surrounded the vessels and nerves was now cut into, and the median nerve being discovered, where it entered was gradually laid bare and dessected out so that it lay perfectly loose in the wound for an inch and a half or two inches of its length. It was thought best not to divide the nerve, but to await the result of the healing of the wound. The edges of the wound were loosely approximated, and water dressings applied. For some days the pain was entirely relieved, although from the effect of the habitual use of morphia, a small dose was required to promote sleep. As the wound began to heal, however, the pain returned, but was much less severe than before. Desiring now to return home, one of his family was instructed in the use of the subcutaneous injection of morphia. About two months afterwards he called on me, and again (March 20, 1863), four months after the operation. He was then in a state of perfect health, and had gained much flesh, but complained still of neuralgic pain in the head, requiring the employment of the narcotic injection, whether from habit or not seemed to be a question. The arm, hand, and fingers had begun to acquire some motion. In regard to the local effect of the injections it my be said, that although they had been used twice a day for five months, he had never suffered from any irritation at the point of puncture except in one instance in the case of a freshly prepared solusion

of sulphate of morphia, the use of which was followed by the production of a large red blotch whenever it was injected. On substituting a solution of acetate of morphia no farther trouble of this nature was experienced.* The patient had, therefore, had nearly three hundred injections of morphia, more or less, and with the above exception no traces remained of its protracted use.

Oct. 26, 1863. I have just seen this patient, and find that he has recovered his health and enjoys complete immunity from pain. The hypodermic injections were continued until the month of July, or about nine months from the receipt of the injury. He then, by a great effort, suddenly discontinued them, and has not used them since. The neuralgic affection, except during extreme changes of the weather, has left him. The forearm has recovered its natural sensibility; he has the power of complete flexion of the elbow, and of partial rotation of the forearm, while the fingers, which were formerly held in a state of extension, can now be approximated to the thumb, so as to make the hand useful for most of the ordinary purposes of life. This motion is continually improving.

Case II. *Gunshot Wound of the Thigh implicating the Sciatic Nerve.*—I have lately had under my care, in the hospital, a soldier, who, two months before, was shot in the thigh, and was taken prisoner. The ball traversed the thigh from side to side, and, probably, injured the sciatic nerve, in whose immediate neighborhood it must have passed. He suffered no inconvenience in the site of the wound, but shortly afterwards a severe neuralgic pain commenced in the sole of the foot, accompanied by a sensation of heat and great tenderness of the part, and entirely incapacitating him for locomotion. Opiates in the usual form gave him but little relief, and the only alleviation of his sufferings while in prison at Richmond was obtained by keeping the leg constantly plunged in a pail of cold water. I immediately ordered the subcutaneous injection of a quarter of a grain of morphia daily into the leg, and gradually increased the dose to a grain a day. By this treatment the pain was completely held in check, rendering his days and nights comfortable. The full effect of each dose was obtained in from five to ten minutes after injecting it.

In the course of this case I experimented as to the effect of the injection, when made at a distant part of the body, as com-

* This accident is probably to be explained by the common practice of adding free sulphuric acid to promote the solubility of certain specimens of sulphate of morphia. The acetate is very soluble in water.

pared with its effect when applied in the immediate vicinity of the affected nerve. I found that when the injection was made in the opposite limb to that affected, the relief was as prompt and as complete as when made directly over the course of the nerve; and this occurred repeatedly, in every instance in which it was tried. This is a point of very considerable importance, inasmuch as it is often very inconvenient to make the injection in the exact situation of the affected nerve, as has been strongly insisted on by several writers upon this subject.

Case III. *Injury of the Ulnar and Musculo-Spiral Nerves, from a Bullet.*—Captain C——, who had already been twice wounded in the thigh and leg in the battles of Winchester and Fredericksburg, was hit at the battle of Gettysburg by a ball just over the median nerve. It passed in a spiral direction around the bone, and came out half way down the limb below on the other side. The hand and forearm were at once partially paralyzed, and in a day or two very severe neuralgic pains commenced, principally in that part of the hand supplied by the ulnar nerve. When I first saw him, about a week after the injury, the arm was much swollen, and the wounds, which had still on them the cold water dressing, were in an irritable state, and there was no appearance of suppuration. The water dressings were replaced by a large warm poultice, and on a free suppuration being established the extreme pain in the arm and hand was much relieved. The pain, however, still continued to recur at intervals, and the paroxysms coming on at night were very severe. Finally the hypodermic injection of morphia was tried, and a single dose of $\frac{1}{2}$ grain afforded entire relief for the time being, and in fact distroyed the habit so that the paroxysms did not recur. The hand and arm, however, for a long time afterwards were very uncomfortable on account of the excessive heat of the parts, which was only relieved by the constant use of cold water, and it was not until after several months that the normal sensibility began to return, and this symptom to disappear. Seen again at the end of five months, he was free from neuralgic pain, had some use of his hand, and the elbow has become flexible after employing forcible extension to overcome stiffness produced partly by inaction and partly by the contraction of the injured muscles. The movement of rotation of the forearm had not yet been recovered by the patient, although they could be easily made by a second person, the nervous power being still defficient.

Case recorded by Mr. Longmore (Holmes' *System of Surgery*, vol. ii. p. 88).

"A soldier of the 37th Regt. was wounded at Azimghur on the 27th of March, 1858, by a musket ball through the right side of the neck. It entered just below the horizontal ramus of the jaw, and made its exit behind, over the scapula. About three pints of blood escaped, supposed to be from the external jugular vein. The wound healed favorably, but he lost the use of his right arm, at first completely, and afterwards partially, for three months. At the expiration of that period the power of the arm was restored, but he was invalided home on account of severe pain in the back of the neck, 'resembling toothache,' which all treatment failed to relieve. The pain spontaneously and gradually ceased; there is still some loss of of substance of the trapezius muscle of the right side of the neck, and of the right as compared with the other arm, with occasional numbness, when the man is in heavy marching order; but in all other respects he is well, and is at his regular duty.—*American Journal of the Medical Sciences.*

LETTERS FROM DR. W. N. COTE.

Foreign Correspondence of the Philadelphia Medical and Surgical Reporter.

PARIS, *June* 28, 1864.

Albuminuria.—In albuminuria the urine is of a very low specific gravity, never exceeding 1012, and sometimes falling as low as 1004, whilst the specific gravity of healthy urine is about 1015, and in diabetis melitus it often rises to 1040. This unnaturally low density of the urine in albuminuria shows that the other ingredients proper to healthy urine, such as urea and salts, are preternaturally diminished in quantity. Whilst the solid contents of healthy urine amounts to about seventy parts in a thousand, in albuminuria they are often reduced to twelve, and have been met with even lower than this. Various methods of treatment have been resorted to for diminising the quantity of albumen, an animal principle which is a great agent in nutrition and not an excrementitious product, and increasing the quantity of urea and salts which should be eliminated from the body. Mercury has been employed, but opinions vary as to the propriety of using it in the granular degeneration of the kidney, and although instances of recovery are recorded after severe salivation, the general impression is, that the mercurial influence is prejudicial rather than salutary. The tension of vessels is often relieved by cupping-glasses, and the secretions of the skin much promoted by the use of warm baths and

diaphoretics, whilst purgation and diuretics have been employed for removing as far as possible the dropsical accumulation. A physician of this city, Dr. Namias, has lately had recourse to electricity in the treatment of this disease, and he has obtained very hopeful results from its application. This agent has, it appears, the property of increasing the quantity of urea in the urine. Whether it does so directly by acting on the urea itself, or indirectly by invigorating the whole economy has not yet been ascertained. I confine myself to stating the fact without commentary. It would be well could experiments be made with this powerful remedy in order to show its real value in the treatment of albuminuria.

Variations of the Pulse in Lying-in Women.—In lying-in women enjoying good health, a slackening of the pulse is usually met with. The frequency of this phenomenon necessarily varies according to the sanitary condition of the economy. It does not depend upon any particular condition of some females, some of whom may have a quick pulse and others a slow pulse. According to Dr. Blot it is a general fact in relation with the depletion of the uterus. The degree of relaxation may vary considerably, it most usually oscillates between 44 to 60 pulsations. In one case the pulse fell as low as 35. The alimentary regimen seems to have no influence whatever on this phenomenon. It is more frequently met with in multiparous women than in primiparous ones, a fact which finds its explanation in the greater frequency of puerperal accidents in the latter class. The duration of the relaxation varies from a few hours to ten or twelve days. As a general rule the greater the relaxation the longer it lasts. The progress of this relaxation of the pulse is usually the same, it begins within twenty-four hours after the delivery, goes on increasing, remains stationary, and then dispears by degrees. It has often been seen to persist during the period so generally and yet improperly denominated as milk fever. This anomalous condition of the pulse seems to exert no very marked influence on the general state of the economy, although it may be considered as a very favorable symptom since it is met with only in healthy women. In an hospital its frequency indicates an excellent sanitary condition; its variety, on the contrary, must give reason to fear the near approach of some epidemic. As to its cause, it should not be sought in a kind of nervous exhaustion. The sphymographic researches made with the help of M. Marez, show in a manifest manner that it is in relation with an increase of arterial tension after delivery.

Treatment of Epilepsy.—Dr. Brown-Séquard, author of a number of fine works, most of which have been published in France, has shown the influence exercised by relax action on paralysis and convulsions. For many years past, he has endeavored to arrest epileptic fits, either by directly treating the part from whence proceeded the *aura*, or by interrupting the transmission of the convulsory starts by means of a ligature, which the patient promptly tightens the moment he feels the sensation marking the invasion of the fits. By employing this mode of treatment Dr. Brown-Séquard has been enabled to operate some remarkable cures.

Rubeola.—Rubeola has been long since known in Germany under the name of *Roetheln.* It was pointed out for the first time in France, in 1574, by Baillou. It has been observed under an epidemical form in Alsace, by Matthieu; in Haute Saxe, by Zeigler; at Groningue, by Geertsema. During an epidemic of scarlatina, which raged from 1838 to 1840, at Strasburg, Dr. Stoeber observed several cases of this disease, and gave it the name of *scarlatine rubeoleuse.* Drs. Barthoz and Rilliet, in their work on diseases of children have met both with scarlatina and measles in seven cases. In his *Traite de Pathologie*, Dr. Gintrac, of Bordeaux, devotes a special chapter to the study of this disease, and publishes five well detailed cases of it. Rubeola, according to our author, may be considered as having an existence of its own, and deserves a place apart in the pathology of the skin.

Osteogenesis.—Dr. Bruch, of Germany, has communicated to the Academy of Sciences the results of his researches on osteegenesis. The main conclusion our author derives from his study of this subject is as follows: "I consider it incontestable that the osseous tissue in all classes of vertebræ, is formed by *epigenesis*, that is, by successive layers which are of an osseous nature from their beginning, either at the external or internal part of the cartilages. The pretended ossification of the cartilage never produces bone, it is always cartilage impregnated with calcareous substances, the cellules of which always maintain the same form, and are never transformed into anastomatic radiary osseous corpuscles.

Acetate of Potash in Urethral Blenorrhagic.—Dr. Ambrosale, of Italy, is much against the use of acetate of potassa in the treatment of urethral blenorrhagia. Administered in heavy doses it cures acute and subacute blenorrhagic urethritis, but exercises no influence whatever on the other kinds of blenorrhagia. In order to obtain satisfactory results 100 grammes need

be taken and even more. The injections made with a saturated solution of this salt modify the mucous coats and arrest the progress of the morbid secretion, but they act with slowness, so that they should not be preferred to those of sulphate of zinc, tannin, alum, etc. Even at high doses the acetate of potassa is well borne by the stomach, and only brings about an abundant secretion of urine. Owing to the slowness with which it acts, this salt cannot replace the balsamic substances nor the ordinary injections, nor again the means called abortive. It should be prescribed only to patients who cannot bear balsam or refuse to take injections. Whether employed internally or under the form of injection, acetate of potassa has no effect on chronic inflammations of the urethra. The action of this salt is purely topical and diuretic.

Nitrate of Silver in Peraplegia—Dr. Bouchut, physician to the Hospital St. Eugénie, recommends nitrate of silver against the essential paraplegia so often met with in children. He relates several cases in which this remedy has been used with the greatest success. His plan consists in administering at first one centigramme of nitrate of silver, divided into two pills, one in the morning and the other in the evening. The dose may be increased until a notable amelioration takes place. It is probable that the cases of paralysis adverted to by Dr. Bouchut would have been cured by themselves. Still it must be admitted that all means, except the nitrate of silver, have hitherto proved very unsatisfactory.

Book Notices.

The Functions and Disorders of the Reproductive Organs in Childhood, Youth, Adult Age, and Advanced Life Considered in their Physiological, Social, and Moral Relations. By William Acton, M.R.C.S., Late Surgeon to the Islington Dispensary; and formerly Externe to the Venerial Hospitals, Paris; Fellow of the Royal Med. and Chirurg. and Statistical Societies, &c. &c. From the last London Edition. Philadelphia: Lindsay & Blakiston. 1864.

This is a full-sized octavo volume of 269 pages, and contains much interesting and important matter. We shall refer to it again at a future time.

THERAPEUTICS AND MATERIA MEDICA. A Systematic Treatise on the Action and Uses of Medicinal Agents, including their description and history. By ALFRED STILTE, M.D., Professor of Theory and Practice of Medicine in the University of Pennsylvania; Physician to St. Joseph's Hospital, &c., &c., &c. Second Edition, revised and enlarged. In two volumes. Philadelphia: BLANCHARD & LEA. 1864.

This is a full and valuable treatise on Materia Medica, consisting of two volumes of about 800 pages each. The first edition has been long enough before the profession to have its merits well known; and it has justly taken rank among the best standard works on the subject of which it treats.

For sale by W. B. Keen & Co., 148 Lake Street, Chicago.

THE BOOK OF PRESCRIPTIONS, containing 3000 prescriptions, collected from the practice of the most eminent Physicians and Surgeons, English, French, and American. Comprising also a Compendious History of the Materia Medica; Lists of the Doses of all Official or Established Preparations; and an Index of Diseases and Remedies. By HENRY BEASLEY, Author of the "Druggist's Receipt Book," and the "Medical Formulary." Philadelphia: LINDSAY & BLAKISTON. 1864.

This is a full-sized octavo volume of about 300 pages, and is probably the most useful book of its kind, accessible to the student. The contents of the book are fairly indicated by the title-page.

For sale by W. B. Keen & Co., 148 Lake Street, Chicago.

DIPHTHERIA. Its Nature and Treatment. With an account of the History of its Prevalence in various Countries. By DANIEL SLADE, M.D. Being a second and revised edition of an Essay, to which was awarded the Fisk Fund Prize for 1860. Philadelphia: BLANCHARD & LEA. 1864.

This is a neatly published volume of 166 pages. And of the many monographs written on the subject of diphtheria, during the last five or six years, this is one of the best.

For sale by W. B. Keen & Co., 148 Lake Street, Chicago.

LECTURES ON VENERIAL DISEASES. By WILLIAM A. HAMMOND, M.D. Philadelphia: J. B. LIPPINCOTT & Co. 1864.

This volume is published in excellent style, and embraces 20 lectures on the nature, symptoms, and treatment of the various forms of syphilitic disease. We have not had time to examine

its contents in detail; but have no doubt it will amply repay the practitioner for a perusal.

For sale by S. C. Griggs & Co., 41 Lake Street, Chicago.

Editorial.

Galactogogues.—There are few physicians in active practise who do not meet with mothers, in whose breasts the secretion of milk becomes too scanty for the wants of the child, and occasionally one, in whom there is a uniform tendency manifested by the mammary glands to stop the secretion altogether at an early period of lactation. To remedy this, many remedies have been tried, but generally with little or no benefit. Among the agents most frequently resorted to, are the fermented drinks, as beer, ale, porter, &c. We have inquired, closely, concerning the effects of these agents on a considerable number of nursing women, but have never yet seen a case in which they caused a perceptable increase in the quantity of milk secreted. As all experiments with alcoholic liquors, appear to show conclusively that while present in the blood, the sum total of secretions and eliminations is diminished; we could not expect them to act the part of galactogogues. Recently, Dr. Skinner, of Liverpool, has claimed decided success in promoting the secretion of milk by faradization, or the passage of gentle electric currents through the mammary glands, once a day, or once in two or three days, according to the degree of deficiency in secretion. The remedy is simple, easy of application, and certainly worthy of a fair trial. If any internal remedies were to be used, we would suggest the compound syrup of the hypophosphites, especially when the mother is more or less anemic.

The Illinois State Medical Society.—Comittee on Diseases of the Eye.—The Committee would most respectfully request members of the Society, and of the profession generally, to contribute reports of important cases and papers upon any subject in Ophthalmology

The Chairman of the Committee would especially solicit the record of all facts, relating to epidemics of conjunctivitis in different parts of the State—the condition of the soil and atmosphere—the habits and occupation of the patients, and the severity and number of cases.

We would also solicit the history of cases of injury of one eye followed by sympathetic ophthalmitis in the other eye.

E. L. HOLMES, *Chicago.*
R. E. McVEY, *Waverly.*
J. S. WHITMIRE, *Metamora.*
F. B. HALLER, *Vandalia.*

CITY MORTALITY.—STATISTICS FOR NOVEMBER.

The assistant health officer, Mr. M. P. Riordan, has just completed his monthly report of the mortality of the City, which is presented below. The whole number of deaths during the month of November was 242, or 28 less than those of the preceding month, and a decrease of 18 from the number of deaths during the corresponding month last year. Small-pox, which was such a fearful scourge in our city in 1863, has not yet prevailed to such an extent as to characterize it as an epidemic. The number of deaths, from this disease during November, was only 11, being a decrease of 7, from those of the same month last year.

DISEASES.

Accidents,	5	Erysipelas,	2	Pleurisy,	2
Apoplex,	2	Gravel,	1	Pneumonia,	2
Consumption,	42	Heart Disease,	4	Peurperal Fever,	3
Congestion of Brain,	4	Irritation,	1	Scalded,	2
Congestion of Bowels,	1	Inflammation of Brain,	4	Ship Fever,	1
Congestion of Lungs,	2	Inflammation of Bowels,	14	Scrofula,	3
Congestive Fever,	1	Inflammation of Lungs,	6	Small-Pox,	11
Croup,	15	Intemperance,	1	Stillborn,	11
Convulsions,	6	Jaundice,	1	Summer Complaint,	1
Childbirth,	2	Killed,	4	Scarlet Fever,	4
Cramps,	14	Lung Fever,	2	Typhoid Fever,	10
Cancer of Stomach,	1	Marasmus,	1	Typhus Fever,	3
Diarrhœa,	6	Nervous Fever,	1	Teething,	9
Diphtheria,	7	Neuralgia,	6	Unknown,	10
Dropsy,	8	Old Age,	1	Water on the Brain,	2
Drowned,	1	Poisoned,	1		
				Total,	242

NATIVITIES.

Chicago,	115	Wales,	2	Prussia,	1
Colored,	4	Bavaria,	1	Sweden,	1
Canada,	7	Germany,	21	Other States,	30
England,	6	Illinois,	4	Unknown,	4
Ireland,	29	Norway,	7		
Scotland,	4			Total,	242

AGES.

Under 5 years,	104	Over 40 and under 50,	19	Over 90 and under 100,	2
Over 5 and under 10,	19	Over 50 and under 60,	14	Unknown,	3
Over 10 and under 20,	12	Over 60 and under 70,	12	Stillborn,	12
Over 20 and under 30,	14	Over 70 and under 80,	5		
Over 30 and under 40,	26			Total,	242

COMPARATIVE TABLE.

The following comparative tables show the number of deaths in each division of the City, for the months of November in this and the preceding year:—

November, 1864.		*November*, 1863.	
North Division,	79	North Division,	61
South Divison,	89	South Division,	125
West Division,	73	West Division,	74
Unknown,	1		
Total,	242	Total,	260

Messrs. Editors.—With the view of making the list of Permanent Members of the American Medical Association a correct one, the undersigned desires information from the members relative to any changes or deaths which may have occurred since the publication of the volume for 1863. Response should be made immediately, as the new volume is nearly ready for the binder.

Wm. B. Atkinson, M.D.,
Philadelphia, Dec. 8, 1864. *Permanent Secretary.*

Catheterism of the Duodenum and Jejunum.—Mr. Blanchet, in a paper presented to the *Academie des Sciences*, mentions four cases in which this operation was successfully effected, for the purpose of expelling foreign bodies engaged in the digestive tube, or of overcoming intestinal occlusion. The feelings of the patient seemed to afford sufficient proof that the sound penetrated beyond the pylorus, and experiments on the dead subject prove that the instrument can be introduced without serious difficulty through the duodenum into the first part of the jejunum. The author suggests that this will prove a useful method for distinguishing strictures, tumors, occlusion, and foreign bodies of the intestinal canal, and for introducing remedies or food beyond the pyloric orifice of the stomach, when that organ, from a state of disease, cannot tolerate them. The flatus, which sometimes accumulates in the intestine, giving rise

to dangerous symptoms, may likewise be evacuated by the same means.—*Australasian Med. and Surg. Review.*

Obstinate Constipation.—M. Homolle has found the following powder efficacious in two cases, where obstinate constipation had raised the question of operation for artificial anus:—Powdered strychnine, one fiftieth of a grain; powdered nux vomica, one-fifth of a grain; calcined magnesia, six grains; mix. One powder a day at first then two, and finally three per diem. In both cases the bowels were moved, and the symptoms of suspected internal strangulation disappeared.

Professor Trousseau on Aphasia.—This popular professor, in one of his late clinical lectures at the Hotel Dieu, of Paris, dwelt on a peculiar complaint, the symptoms of which are the inability in the patient pronouncing certain words, and of expressing his thoughts, retaining at the same time the full use of his intellectual faculties. M. Broca, who first directed attention to this malady, called it *aphœmia*, which term M. Trousseau, aided by the celebrated philologist, Littre, considers wrong, as it really means "bad repute." *Aphasia* is better.

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THE

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N. S. DAVIS, M.D., EDITOR.

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Original Contributions.

ARTICLE XLI.

BROMINE IN THE TREATMENT OF DIARRHŒA AND DYSENTERY.

OFFICE PRISON HOSPITAL,
Rock Island, Ill. November 14, 1864.

DOCTOR:—I have the honor to report the result of a course of experimenting, the object of which was the discovery of a remedy for the cure of chronic diarrhœa and dysentery, as they occur in camp-life.

September 5, 1864, I organized a ward capable of accommodating 43 patients, and up to the 20th of October, 90 have been admitted; 47 were cases of chronic diarrhœa, 31 acute dysentery, and 12 acute diarrhœa.

TREATMENT.

℞. Bromine, ---------- qtts. vj.
Bromide of Potassium, ---------- grs. xv.
Aqua, ---------- ℥j. M.

I administered one drachm every two hours during the day, without regard to stage, complicating character of discharge, or constitutional symptoms, with the following results:—Returned to barracks, cured, 79; remaining in ward, 10; died, 1. The remaining 10 are suffering from chronic diarrhœa, complicated with scurvy; very much emaciated, and will not be able for duty within sixty days; and all such cases are ordered South

for exchange. I am of the opinion that they would finally recover, were they kept on the bromine treatment. The *post mortem* made on the body of the case resulting in death, shows its complications; and the difficulty of treating such cases is apparent to the most casual observer.

William Baily, Private, Co. B, 2d Ky. Cav. transferred into ward, October 11, 1864; died October 19, 1864.

Sectio cadaveris; 36 hours after death. Body:—Greatly emaciated. Thorax:—Both lungs were numerously scattered over the whole surface with miliary tubercles, but somewhat aggregated at the apices, both pleuræ adherent throughout by strong adhesions; the parenchyma between the turbercles was much indurated by pneumonia, of a grey color, from pigmentary deposit; heart very large, abnormal, and fatty.

Abdomen:—The liver enlarged, and greatly altered in shape, of a dusky color, and on section presenting semi-translucent edges; stomach ulcerated to some extent; mucous membrane of large intestines was extensively ulcerated; the bowels thickened and disorganized; small intestines were œdematous, and the coats generally thickened; about the middle-third of the jejunum was found an intussusception of about two inches in length; immediately above and below were two worms (lumbricoid) of different size; the smaller above, and the larger below; beneath the invagination, the gut was greatly congested; other organs healthy.

I found the acute cases, both of diarrhœa and dysentery, recover with greater rapidity than did the chronic; the progress of the latter, in my opinion, was retarded in a great measure by the too frequent use or administration of the remedy, for in the extreme emaciated cases, the medicine would cause a slight nausea of the stomach, thereby preventing the patient from taking the proper amount of nourishment necessary to sustain life. But when administered at long intervals, no such symptoms occurred, as shown from experiments outside of my ward. The digestion improved, griping and tenesmus subsided, and the discharges gradually became more natural, until the patient was entirely restored to health. It is proper to state

that the chronic diarrhœa cases were the worst that could be selected from the hospital; most of them were of over 12 months standing, greatly emaciated, tongue dry, and contents of the bowels passing off, as they lay in bed, without an intermission.

In those cases, complicated with chronic inflammation of the lungs and lining membrane of bronchial tubes, and even where the lung was dense, solid, and impervious to air, in some part (which is more or less the condition of these extreme emaciated diarrhœa subjects) I found the pains of the chest, dyspnœa, together with the troublesome cough entirely disappear in a very short time, and the patient expressing himself as "feeling like a new man."

Whether the bromine acts directly upon the diseased pulmonary tissue by inhalation, or in some other way, remains to be ascertained. As it is exceedingly vaporable, I am inclined to the opinion, that its good results are due to the direct application of the vapor to the tissue involved; a theory in the treatment of chest diseases, I confess I am surprised at the profession viewing with so much indifference. Be this right or wrong, certain it is, I have been astonished at the happy results in such cases as the above, treated with bromine.

Bromine is a new remedy, its status as yet remains unknown or unsettled, and we have but imperfect data from which to draw our conclusions; still I am impelled from personal observations and experience to assert to the medical department, that in bromine we have an agent, certain in its effects to cure all cases of diarrhœa and dysentery, I care not of how long standing, if the patient has sufficient vitality left to sustain life five or six days; a perfect restoration to health may be relied upon, unless the disease is complicated with some serious malady.

I am aware that I am making a sweeping assertion, yet I doubt not that the time will come when the medical profession, both in America and Europe, will verify what I am now saying. I herewith append a note from Dr. SALTER, who has been using bromine in the barracks.

Rock Island Barracks, Illinois, Oct. 12, 1864.

DR. H. F. GILBERT,

DEAR SIR:—Since I had the pleasure of listening to your remarks on the use of bromine in dysentery and diarrhœa, I have been testing for myself the efficacy of that medicine, in the two diseases above mentioned. I have been prescribing it in the prison barracks, where the situation and attending circumstances are by no means favorable for the administration of any remedy, and least of all in diarrhœa and dysentery, notwithstanding, I have found it in many instances of the above complaints to have answered a most excellent purpose, and I believe it to be a very valuable remedy. I do not think, that I ever tried any one article of materia medica, which has proven so satisfactory under all circumstances. There have been several cases apparently not benefitted by its administration, thus proving it not a specific; yet I cannot say that under more favorable circumstances, it might not have been more satisfactory, even in these, and I would here remark that these cases were not relieved by any previous course of treatment, and were subsequently sent to hospital. I would say, in conclusion, that in the treatment of these two diseases, I have found in the bromine a most valuable remedy, in the administration of which, in many severe cases, I have been both surprised and pleased with its efficacy, and deem it well worthy the attention of the profession. Hoping that in your efforts to fathom the full force of bromine, and its applicability to the various diseases now being tested by you, the fullest success may attend.

H. F. SALTER, A.A.S., U.S.A.

In conclusion, I would say that the medical descriptive lists of the above cases, have been carefully kept, and in due time they will be published to the world, that the medical profession may judge of the character of the cases treated, and the power of bromine in effecting a most astonishing cure.

I am sir, very respectfully, your obedient servant,

H. F. GILBERT, *Executive Officer.*

Surg. C. S. TRIPLER, U.S.A.,

Medical Director, Northern Department.

ARTICLE XLII.

OPIUM AND QUINIA SULPATIS. THEIR ANTAGONISM AND CO-OPERATION.

BY T. D. FITCH, M.D., of Chicago.

Read before the Chicago Medical Society.

Dr. GUBLER says, in a French Journal of Pharmacy, that they are antidotes to each other, and that they ought not to be administered simultaneously. Dr. GUBLER is not alone in this decision. Many others have, from observation, arrived at the same conclusion.

We assume that they are not antidotes to each other, only so far as relates to their bad or undesirable effects; and that they may be administered simultaneously, obtaining all their valuable effects when given alone, and under some circumstances, that their reaction upon each other produces the most happy therapeutic results.

Dr. GUBLER says that, the effects of quinia on the circulation are inversely to those of opium. It gives tone or contractility to the capillaries, and thus overcomes congestion. It is antiperiodic and sedative. Opium is a stimulant to the capillary system, and produces congestion, especially of the brain and lungs. Now this is the very point we wish to touch. Quinia, to a great extent, antidotes these bad effects. Being a tonic to the capillary system of vessels protects them from serious accumulations by giving additional tone and contractility.

Dr. CORRIGAN, physician in ordinary to the Queen, in Ireland, says, quinia appears to possess the same power in giving contractility to the capilliaries in the lungs, which we know it possesses in so marked a degree over the capillaries and venous radicles of the spleen. This property of quinia gives a power over almost all forms of venous and capillary congestion, which perhaps it is impossible to obtain by any other known agent.

Opium when given alone in inflammatory affections, is liable to so far paralyze the nervous energies, as to produce fatal con-

gestions. We have seen that quinia possesses the power of producing capillary contraction and tonicity, and so keeping up the tone of the vessels as to completely prevent any such paralysis and its consequent congestion, so that the full effect of opium may be obtained without the least danger of this result.

Opium has the effect, when given alone, of so far diminishing the billiary and renal secretions as to endanger fatal toxemia. It also diminishes all mucous secretions, salivary and pancreatic secretions. It also produces constipation, partly by the check to the secretion from the liver, and partly by directly paralyzing the muscular coats of the bowels. These unpleasant properties and effects render the use of it objectionable in fevers, inflammations, &c., where, as a general thing, these secretions are already deficient, and the bowels constipated. Could these bad effects be avoided, there are many important indications in those complaints that could be most perfectly filled by the use of opium. Now quinia combined with the opium will, to a very great extent, prevent all those bad effects, while it does not materially diminish its action on the skin. In fact, I believe that its diaphoretic properties are increased rather than diminished.

On the lungs its operation is likewise modified. When given in large doses, it has the effect to so far reduce the number of respiration per minute, that it materially interferes with the proper oxygenation of the blood; as we have seen by the remark of Dr. CORRIGAN, quinia has peculiar power over the capillaries of the lungs, thereby preventing fatal congestion, and keeping the number of respirations to a more healthy standard.

The after effects of opium, we are all familliar with, such as nausea and vomiting, severe headache, general prostration, &c. All physicians are perplexed with such results, which nearly or quite counterbalance all good that has been experienced. We therefore resort to other preparations of the drug, hoping to find something that will be borne without such unpleasant results, morphia, sulph., mur. and acet., black drop, McMun's elixir fluid extract, and sometimes having to content ourselves with the use of an inefficient substitute, such as hyoscyamus,

belladonna, cicuta, and lupulin, none of them filling all the indications filled by opium when well borne.

The foregoing unpleasant symptoms seldom if ever make their appearance when opium is associated with quinia. The prickling and itching sensations felt in the skin, and especially the nose, are not at all modified by the use of quinia, it having no antidotal effect on the diaphoretic properties of opium.

Many persons cannot take opium on account of peculiarity of temperament, or idiosyncrasy. In these cases the manifestations are variable, delirium and great restlessness; and in these cases quinia given in combination with the opium produces the happiest effects; in fact, I have often seen this exemplified in my own practice. I have never paid any attention to this idiosyncrasy since I commenced giving these two remedies combined. I have administered them to many persons that could not take opium at all in former years, without the least unpleasant effect.

In cases of extreme exhaustion, after protracted hemorrhages, opium is known to be one of the best stimulants to the circulation. The system then tolerates the remedy most wonderfully; but in these cases, when reaction does come on, there may be sufficient opium yet in the system to produce serious if not fatal narcotism. Quinia will enable us to keep up the vital forces without the use of opium so frequently or so largely. By the foregoing it will be seen that most of the unpleasant effects of opium may be entirely relieved by the association of quinia.

On the other hand, the unpleasant effects of quinia, such as ringing in the ears, and noises in the head, always produced by large doses of quinia, are seldom if ever experienced when opium is associated with it. The nausea and vomiting, and general constitutional irritation so frequently produced where quinia is given alone, is seldom if ever produced when opium is added.

In many cases where the well known effects of quinia are very desirable, and peculiar circumstances prevents its administration, for instance, in active inflammations or fevers, we frequently get an excitement and general increase of fever and

of the circulation. Opium combined with quinia under such circumstances, relieves irritation—makes a diversion of the circulation to the skin, producing free perspiration, so that the quinia may be tolerated in large doses, and its peculiar effect on the capillaries and nerves secured.

In neuralgias and rheumatisms, where both remedies are acknowledged of great value, when given alone, their combined action is found generally to be much more satisfactory. The opium relieving irritation and pain, diverting the circulation to the skin, producing copious perspiration, and in fact, generally equalizing the circulation, while the quinia acts as a permanent tonic, and anti-periodic where malarial poison exists in the system.

In acute catarrh, coryza, or general cold, fever, pain in the back, extremities, and frontal sinusses, the patient may be directed to take quinia sulph. grs. v. to viij., opii. pulv. grs. ij. to iij. every three hours, (after an active cathartic has been given, where the bowels are constipated), and the result is that after one or two doses have been taken, free perspiration follows with entire freedom from all pain, and the patient soon recovers.

This combination is especially useful in dysentery, after the bowels have been properly evacuated, and the secretions attended to by the administration of proper alteratives.

Its effects are more striking, if possible, in idiopathic or malarial fevers, when the effects of quinia are indispensable; in these cases it may be given, after proper alterative and evacuative treatment has been instituted, in any stage, whether in presence or absence of fever, and a perfect intermission in the fever procured in most cases.

My practice in these cases is to administer when the bowels are constipated an active alterative cathartic, then taking the most favorable time, which is always in the morning, I give, say, three powders, three hours apart, composed each of quinia sulph. grs. v. to viij., opii. pulv. grs. ij. to iij., the effect is to produce free diaphoresis and allaying of all pain, a lessening of the frequency and force of the pulse, and the mucous secretions

are more abundant. I then omit the remedy, following with such simple treatment as the case requires, until the next morning, when I repeat the process with like results. In from one to three days a perfect intermission is secured, and what might have resulted in a long continued or typhoid fever, is converted into a simple intermittent, or entirely interrupted and completely cured. The combined action of these two remedies in these cases, I consider a desideratum, and worthy a trial by those of you who have not already witnessed their effects.

If these are facts which I have stated, you will readily see that these two remedies are not essentially antagonists but a co-operatives, and applicable in the treatment of a large class of cases which we meet in this country.

ARTICLE XLIII.

RHEUMATIC IRRITATION IN THE DIAPHRAGM AND PSOAS MUSCLES.—Clinical Cases, Reported to the Chicago Medical Society, Dec. 23, 1864.

By N. S. DAVIS, M.D., Chicago, Illinois.

Case I. Mr. O. H. T——, aged 55 years, naturally robust; sanguine in temperament; accustomed to moderate exercise; and occasionally affected with slight rheumatic attacks; was suddenly seized, on the morning of Nov. 25, 1864, with very violent pain in the right hypochondriac region, extending from the ninth rib down to a level with the crest of the ilium. He had taken his breakfast as usual, and gone to his place of business, when he was seized with the pain rather suddenly, and it became so violent that he was carried to his house, and when I saw him, about two hours after, the pain had reached such a degree of intensity as to appear unendurable. The patient literally writhed in agony, and yet every motion of the body, and especially of respiration, increased the suffering. The pulse was small, 85 per minute; skin cool and moist; face pale; tongue clean; respiration irregular and suppressed to avoid

increase of pain; stomach and bowels quiet; and urinary secretions, as far as the patient had observed, nearly natural. About two or three weeks previously the patient had been attacked very suddenly and severely with a pain in the proximal-joint of the great toe, accompanied by some swelling, and closely resembling rheumatic gout. It subsided so rapidly, however, that in forty-eight hours he returned to his business. The location and severity of the pain, in the present attack, was calculated to raise the question of diagnosis between pleurisy, hepatitis, calculi in the biliary ducts, and neuralgic rheumatism in the diaphragm and lower intercostal muscles. The entire absence of fever; the soft and quiet condition of the pulse; and the absence of pleuritic friction, seemed to negative the idea that either of the two first existed; while the absence of vomiting or gastric disturbance equally militated against the supposition that obstruction of the hepatic ducts existed as the cause of suffering.

The preceding attack of pain and swelling in the toe, and the known predisposition of the patient to rheumatism, caused me to regard the present difficulty as neuralgic rheumatism in the right half of the diaphragm, and perhaps extending to the origin of the psoas muscle of the same side. I directed the affected side to be covered with narcotic fomentations, and gave internally the following:—

℞. Vin. Colchici Sem.,---------- ℥j.
Acetum Opii.,---------- ℥j.

Mix, and give half a teaspoonful in water every two hours. Also a powder containing calomel, two grains, nitrate potassa, six grains, and sulphate morphia, one-third of a grain, between the doses of the other medicine. The interval between the doses of both medicines was to be lengthened as soon as the severity of the pain was relieved.

At a visit eight hours later, I found the patient much relieved, and lying quiet in bed. Very slight frebrile reaction had come on; had passed a small quantity of urine of a red color; and was drowsy without real sleep. There was some tenderness to pressure over all the space between the lower edge of the ribs

and the superior and anterior part of the ilium; and a renewal of very acute pain, with every attempt either to depress the diaphragm by a full inspiration, or to rotate the body, or flex it on the pelvis. The same remedies were continued at longer intervals, until the following morning, Nov. 26th; when the patient was found free from pain and fever so long as he remained quiet in a recumbent position. But acute soreness was still felt on taking a full inspiration or flexing the body on the pelvis; and the urine remained scanty and high colored. The powders were now discontinued, and two drachms of Rochelle salts, in the form of effervescing draught, ordered to be given every three hours until the bowels were moved. After the bowels had been freely moved, he was directed to take a teaspoonful of the following solution every three hours, namely:

℞. Acetas Potassa, Bicarb. Soda, āā ------ ℥iij.
Tinct. Stramonii,---------- ℥j.
Water, ---------- ℥iij.—Mix.

Nov. 27th, patient quite comfortable and able to move with only a moderate feeling of soreness. Continued the saline solution with the strammonium four times a day. From this time the patient continued to improve, and was able to leave the house on the sixth day after the attack.

CASE II. Mr. H——, aged about 30 years; of sanguine temperament; and usually enjoying excellent health; was attacked, on the 18th of Nov'r, 1864, with symptoms of a mild typhoid fever. It continued about two weeks, when the patient appeared to convalesce. On the night of Dec. 5th, however, he was suddenly attacked with very severe pain, extending from the lower ribs of the right side quite down to the iliac fossa; and so greatly aggravated by the slightest effort to turn or flex the body on the pelvis, that the patient could scarcely be induced to move in any degree from a recumbent, dorsal, position, a little inclined to the right side. There was no tympanites or disturbance of the bowels to indicate disease in the cœcum or ascending colon; neither was there much disturbance of the pulse or fever. The urine was scanty, high colored, and gave an unduly acid reaction.

The patient was treated in substantially the same manner as the first case, and recovered so fully as to leave the house and endure quite a journey at the end of nine days from the attack.

Case III. Mr. S——, aged 33 years, nervo-bilious temperament, active, and of temperate habits; was attacked rather suddenly, on the 5th of December, 1864, with a dull pain in the left side of the abdomen, which was increased by motions of the body, and by flexing the left thigh upon the abdomen. He remained in this condition until the 8th, when the pain become extremely severe, accompanied by some tenderness to pressure over the left side of the abdomen, and entire inability to move the effected side without the most excruciating suffering. The pain seemed to be chiefly located in the track of the left ureter where it crosses the psoas muscles. Though constant, the pain, as in the two preceding cases, had frequent exacerbations. There was no general febrile action present; the skin natural; pulse 80 per minute, and soft; tongue covered with a thin white coat; bowels natural; and urine scanty and high colored. Although there was no pain extending to the testicles or glans penis, yet the suffering of the patient was referred so directly to the course of the ureter, that I was at first disposed to regard the case as one of gravel or calculi in that duct; and prescribed accordingly. At my next visit, twelve hours after, instead of relief, the pain was equally intense and had extended higher up towards the diaphragm. This, with a more careful examination of the effect produced by such movements as call into action the psoas and iliacus interms muscles, led me to regard the case as similar in nature to the two already detailed. I accordingly prescribed the vin. colchici and acetum opii., alternated with the powders of calomel, nitrate potassa and morphia, as in the first case. On the morning of the 9th, I found him much relieved, while quiet but still suffering acute pain on attempting to turn or flex the body.

The colchicum mixture was continued, but instead of the powders, he was directed to take a saline laxative. In the evening he was still further relieved from pain; the laxative had operated twice; and he was suffering some nausea. On

account of this last symptom, all other medicines were discontinued, and the following given instead, viz.:—

℞. Acetas Potassa, ---------- ℥iij.
Bicarb. Soda, ---------- ℥iij.
Acetas Morph., ---------- 3grs.
Water, ---------- ℥iij.

Mix, and give a teaspoonful every three hours.

From this time the patient continued to improve and was able to leave his room on the 13th inst.

While the foregoing cases were under treatment, two additional ones came under my care, so similar in all respects that a separate description is not necessary. All these cases occurred between the 15th Nov. and the 8th Dec. It was a period of frequent changes of temperature; cool nights, and excessively damp atmosphere.

During the last six weeks, I have also met with seven cases, in which the chief symptoms were, a hard, *twisting* pain in the abdomen; usually in the umbilical region, and constipation of the bowels. The pain was usually increased at night, and accompanied by some tenderness to pressure. There was also in every case, scanty and high-colored urine, with slightly increased frequency and hardness of the pulse. In some, the tongue was clean, in others, it was covered with a thin, white coat, and the skin was warm and dry. Although the bowels were generally constipated, the operation of physic, instead of affording relief more generally increased the abdominal pains and tenderness.

In three of the cases, after suffering with the abdominal pains as above described, for six or seven days, well-marked sub-acute rheumatic inflammation attacked the shoulders and articulations of the upper extremities, accompanied by simultaneous relief from all pain and tenderness in the abdomen. Regarding these cases as true rheumatic irritation in the muscular coat of the intestines, I treated three of the most severe, first with the wine of calchicum seeds and acetated tincture of opium, equal parts, given in doses of half a drachm every three hours, until the pain was relieved: which was accomplished in from 24 to 36 hours.

The bowels were then moved by a powder composed of calomel five grains, and bicarbonate of soda five grains, followed, if necessary, by two drachms of Rochelle salts. After a fair evacuation of the bowels by such means, the patients were directed the following:—

℞. Bicarb. Soda,
Acetas Potassa, } āā ℥iij.
Acetas Morph., 3grs.
Aqua, ℥iij.

Mix, and give a teaspoonful every three or four hours.

Under the influence of this the recovery of the patients was completed in from three to four days. The remaining four cases alluded to were put upon the use of the saline and morphine solution just mentioned, with a powder at night containing eight grains each of Dover's powder and nitrate of potassa, and two grains of calomel. The abdominal pains were relieved by these remedies in from two to three days, when a laxative was given to open the bowels. This was usually followed by a moderate return of pain and soreness, requiring the use of the saline solution four times a day, for three or four days more, to complete the cure.

I have taken the liberty to call the attention of the Society to the foregoing cases, because they seem to be unusual manifestations of rheumatic irritation, and consequently liable to be misunderstood. I hope the questions of diagnosis and treatment will be discussed freely, by the members present.

CORRESPONDENCE.

New York, Dec. 20, 1864.

Dr. Davis,—*My Dear Sir:*

According to promise, I drop you a line concerning professional matters, in some of our Eastern cities. On my way to New York, I made a short stay of one week in Philadelphia. I found the medical schools in active operation, with a respect-

able class of students in attendance. The matriculants for this term in the University of Pennsylvania numbered (Nov. 10th) a little over 300; in the Jefferson about the same number. The changes which have occurred recently in the Faculty of these Schools are as follows:—The vacancy in the chair of Practice in the University, caused by the resignation of Dr. Pepper, who was the successor of Dr. Geo. B. Wood, is filled by Prof. Alfred Stille. The chair of Obstetrics, made vacant by the resignation of Dr. Hodge, is filled by Prof. Penrose: Prof. P. is a young man less, I judge, than 40 years of age. In the Jefferson, the chair of Chemistry, which the death of Prof. Bache left vacant, is filled by Prof. B. Howard Rand, whom I judge to be about 40 years of age, and the youngest man in the Faculty of Jefferson.

Of the two schools the University (which is in its ninty-ninth Session) is the most popular hereabouts; while the class in Jefferson is mainly made up of students from the Western States. Six lectures are delivered in each per day, and the same chairs are represented at usually the same hour. The clinical instruction is mainly given at Blockley Hospital, which is three miles away from either college. The Faculty of the University have the service and deliver the clinics during the first half of the college term; after which the same duty is performed by the Faculty of Jefferson. Dr. Agnew has the first period of surgical service, and is followed by Prof. Gross.

These venerable schools of medicine afford excellent didactic lectures to their classes; but certainly they are far behind the present demands of the profession in that kind of instruction calculated to fit the student for practice. I refer to clinical. To be sure, two clinics are given a week in Blockley and Pennsylvania Hospitals, in which are found an abundance of morbid material. But the cases are all brought into the amphitheatre, in the presence of 400 or 500 students, not one out of every twenty is any the wiser for the presence of the patient; scarcely one-half can tell from their seats whether the patient is an African or a Celt. And to see a surgical operation is simply out of the question.

It is, however, a pleasure to visit, for a short time, these ancient schools of the prophets, to see and hear the medical patriarchs, Drs. Dunglison, Gross, Pancoast, Dickson, and others, whose works do honor to our medical literature.

The medical schools of New York I found all busy, except the New York Medical College, on 13th Street, which has died from the want of support. The institution had never paid, except *out of pocket*. The college building is now being made into a masonic hall.

The University Medical College continues to progress on the even tenor of its way, having, at present, a class of about 100 students. Prof. Metcalf, of the chair of Practice, has mainly withdrawn from the teaching, on account of ill-health and domestic affliction; his place being filled by Dr. Loomis. Prof. Budd holds the chair of Obstetrics, vacated by the resignation of Prof. Bedford. Prof. Mott, Sen., lectures occasionally.

The College of Physicians and Surgeons continues to maintain its former popularity, having a class of 250 students. Prof. T. G. Thomas fills the chair of Obstetrics formerly occupied by Prof. Gillman.

The Bellvue Medical College has a class of about 300 matriculants—a class too large for its present accommodations. But a new building is in process of erection by the Commissioners of Public Charities, of ample dimensions. It is to be 60 by 100 feet, five stories high. The first floor is for a dispensary for out-patients. The lecture-rooms—two in number—are to be capable of seating 600 students. It is located adjoining and west of the present building, which is to be converted into a museum for the College. The success of this school is remarkable, giving an argument, at last, that the old rotinue of medical instruction is not invulnerable—and not to last forever.

The most important of the medical societies of New York are the Academy of Medicine and the Pathological Society, which meet every Wednesday evening alternately. These societies are participated in by the very best medical talent in the city.

At a meeting of the Academy (Nov. 16th), the subject for discussion was:—"The Ulterior Physiological and Pathological

Effects of Anesthetics." The discussion was opened by Dr. Frank Hamilton, whose views were new and startling. He said, in substance, that he believed anesthetics had produced ten times as many deaths as was generally believed, especially in the army; that they injured the blood; often producing alarming and dangerous prostration and vomiting; they rendered the muscular flaps in capital operations flabby and lifeless for 24 to 48 hours; and that it was rarely possible to get union by the first intention after their use. He cited Drs. Mott, Wood, and Post, as authority, that at an early period, before anesthetics were used, union by the first intention was the almost invariable rule, after capital operations, throughout the City and in the New York Hospital. And in the army, where anesthetics were used so freely, the surgeons almost universally testified, that after amputations union without suppuration was impossible; and, finally, abundant proof could be adduced, that the same results obtained, he believed from the same cause, in the army of the Crimea.

These views were combated by several members. Dr. Detmold said, it was well known that in our armies a scorbutic diathesis had existed, which prevented good success in surgical operations. That this diathesis existed in the Crimean army was a matter of history. He argued, that at an early day, when the city of New York was comparatively small, and the N. Y. Hospital smaller and less crowded than of late years, better success, of course, was obtained in surgery—the reason was manifest. He believed the physiological effects of anesthetics, though powerful for a short time, were temporary—soon leaving the patient in as favorable condition as before their administration. Dr. Connant, and others, advanced similar views. Dr. Squibb said, he thought much of the injury from anesthetics was the induction of asphyxia from too great exclusion of atmospheric air, as well as syncope from too long administration of the remedy. Notwithstanding the opposition excited by Dr. Hamilton's remarks, the logical manner in which he advanced his views, and the interesting facts which he had collected from his extensive observations in military and civil hos-

pitals, secured to him the respectful attention of the Academy, and impressed many of the members with the soundness of his opinions on this subject.

A new medical society was recently organized here, through the efforts of Dr. Isaac E. Taylor, called the "Medical Journal Association." They propose to fit up a reading room, and furnish it with all the leading medical journals of this country and Europe. The room is to be kept constantly warmed, lighted, and in the care of a janitor. A full corps of officers are elected. Dr. Delafield, president, and Dr. Noeggerath, corr.-secretary. The profession of the City is very generally interested in this movement.

Medical journalism in New York, at present, is at a low ebb. However, rumor whispers that medical journals, from two or three different combinations, are soon to appear. The *Medical Times*, too, is to be revived, whether in a weekly or a monthly form deponant answereth not. But more anon. R. P. J.

Selections.

REPORT OF CASES OF HOSPITAL GANGRENE.

By WILLIAM THOMSON, M.D., Asst.-Surgeon, U.S.A.

From the American Journal of the Medical Sciences.

The following histories of cases of hospital gangrene treated in Douglas Hospital, Washington, serve to illustrate several points of great interest in the etiology, pathology, and treatment of a disease hitherto rare in our military hospitals, and most worthy of careful study.

The victims of this disease were wounded at Fredericksburg, Va., Dec. 13th, 1862. For several weeks previous to this battle, the army had been resting on the Rappahannock, and had been exposed to no great hardships. It had been amply supplied with good and varied food, and the men were free from any scorbutic or other cachectic taint.

It is well known that the fullest preparations had been made

by Surgeon Letterman for that engagement. The operations were performed promptly, and the wounded probably received better care than ever before in the history of the war.

On the 26th of December, 1862, about two hundred wounded from the battle of Fredericksburg, were received into the Douglas Hospital.

I cannot speak of their treatment, medical, surgical, or hygienic, as at that time I was not connected with the hospital. I am, however, aware that the building in which the gangrene appeared contained fifty badly wounded, and recent cases; that there was a deficiency of medical officers and dressers to insure the necessary cleanliness, and that the sanitary condition of the ward was far from perfect.

This hospital consists of three brick houses known as "Minnesota Row;" and two large wooden pavilions, each divided into two wards.

The ward in which this disease originated is one hundred and forty-three feet in length, twenty-three feet in breadth, and sixteen feet in height (eighteen feet at the cone, and fourteen at the eaves of the roof), and contains beds for fifty patients, thus giving 1050 cubic feet of space for each bed. There are two rows of windows, the lower of which contains two, the upper one sash each; the upper windows are so constructed as to be opened by means of a cord, but when opened directing a current of cold air immediately downwards upon the beds beneath.

On the 16th of Feb., 1863, I took charge of the hospital, and found the ward mentioned in the following condition: There was no ridge ventilation, nor was there any egress for foul air, except through two large wooden shafts connected with two of the stoves, which had been placed there only a few days previously. The ward was heated by ordinary sheet-iron radiating coal stoves; and no provision had been made, until a few days before, to introduce any supply of fresh air. It contained from forty to fifty patients, all wounded—many of them very severely. The police was not unexceptionable, too little attention having been paid to the removal of offensive discharges. The medical officer in charge preferred to water, as a dressing, either simple cerate or mutton tallow, which had been issued to the hospital, and which had become rancid. The attendants were, from a want of strict discipline, careless and inattentive. There was a perceptible and offensive odor in the ward, which felt close and badly ventilated; and this condition of the atmosphere seemed to have a marked effect on the spirits of the men; they were all gloomy, despondent, and homesick.

On Feb. 17th, when making my first visit with the officer in charge of the ward, I discovered

Case I. Sergt. Otto Kosack, Co. K, 2d Md. Vols., who had been struck by a shell, Dec. 13th, 1862, which made it necessary to amputate his left leg at the middle. The operation was done ten minutes after the injury. He was received here on the 26th Dec. The stump closed by granulation, a small portion of the tibia having been removed by exfoliation. The cicatrization had been almost complete, when, a few days previous to the 17th, the still open wound commenced to slough. He was anæmic, very pallid, haggard, and with an expression of great depression in his features; his pulse was very feeble and rapid. He had been "feeling very badly" for several days, and complained of a burning pain in the stump.

On the outer side of the tibia there was an ulcer, one inch in diameter, covered with a yellowish-gray, pultaceous slough, and a serous and very fetid discharge; the edges were thickened and everted, and an areola of purple, livid congestion extended for half an inch from the margin, which was undermined.

This sore was at once treated with pure nitric acid, applied both to the ulcer and to the areola; the ulcer was dressed with an antiseptic solution of creasote; and citrate of iron and quinine, with stimulants and nutrients were freely given.

On the 18th, the sloughing had extended to the border of yesterday's livid areola, but was now more superficial; and the areola, which had likewise invaded the surrounding skin, was more florid. The ulcer was now two inches in diameter. As there was some doubt as to its specific character, the patient was not removed from the ward until the 23d, when he was transferred, with several others, to a small ward prepared in the brick building, and completely isolated from the other wounded men.

The iron and quinine was found to disturb his stomach and destroy his appetite, and was replaced by a mixture of nitro-muriatic acid and tincture of opium.

March 3d. The sore was now perfectly healthy, and was granulating rapidly.

This was a mild case—treated in its incipiency with nitric acid most thoroughly. The ulceration had not extended so deeply, nor so far beneath the margin of the skin, as to make it almost impossible to reach every portion of the diseased surface.

There was no scorbutus. The gums were firm and hard. The patient was very pallid, his heart feeble, and his pupils

dilated. The mucous membranes were very pale, and the expression of the face haggard and anxious.

He recovered rapidly, with a good stump, and was transferred to St. Elizabeth Hospital, May 4th, to enable him to procure an artificial limb.

This man was seen several months after walking with great ease on his artificial leg.

Case II. L. D. Thurston, private, Co. A, 16th Regiment New Hampshire Vols., aged 42, was struck by a fragment of shell on Dec. 13th, 1862, at Fredericksburg, Va., which caused a severe but superficial wound of the integuments on the outer side of the left thigh.

When seen, Feb. 17th, 1863, there was a wound at the middle of the thigh, on its outer aspect, three and a half inches long by two and a half wide, exposing the muscular tissue slightly, the surface of which was glazed and dry.

On the 10th of February, it had been found desirable to open an abscess, three inches below the left greater trochanter. On the 13th, this had assumed an unhealthy look, and when I saw it on the 17th, the incision made by the lancet, half an inch in length, was surrounded by a border of sphacelus one inch in width, and by an areola of purple congestion, in which there seemed to have occurred a complete stasis of the circulation. There was no pus, but a discharge of very fetid, dark-colored serum. There was no swelling, ulceration, or eversion of edges of the incision, which, although mortified, remained as sharp as when first made.

There was profound nervous prostration, which was indicated by his rapid, feeble, and irritable pulse; by his sallow hue; his haggard and anxious expression of countenance; his weary and helpless decubitus, and great mental despondency.

He was treated internally with stimulants, the most condensed and nourishing food, and citrate of iron and quinine; nitric acid was applied locally, followed by a weak solution of creasote, three drops to the ounce of water, as an antiseptic dressing.

The sphacelus extended in all directions rapidly, unchecked by this treatment, from which I hoped little, since it was impossible to bring the acid into contact with the diseased tissues, although it was injected into the incision. The constitutional symptoms, also, became more grave.

On the night of the 20th, there was quite a severe hemorrhage from the incision, oozing slowly and very difficult to restrain, since it was caused by the erosion of vessels at a dis-

tance from the small incision. There was now a circular patch of sphacelus surrounding this small incision, three inches in diameter.

On February 23d, he was removed to the ward in the brick building. The original wound, hitherto unaffected, now began to be black and offensive. The sphacelus extended from these two centres, at the rate of one inch daily, preceded by the above-mentioned areola of purple statis.

No treatment, local or constitutional, produced the least effect. Stimulants were given in every possible form, until the stomach refused to retain them. Pure nitric acid was freely applied to the diseased surfaces with no benefit. He fell into a typhoid condition, with muttering delirium, subsultus tendinum, etc., and finally expired February 28th.

The sphacelus then extended from the trochanter major to three inches above the outer condyle; and from the median line in front to a corresponding point behind. There had never been any ulceration, but the tissues seemed to perish *en masse*. The incision made by the lancet was yet plainly seen in the centre of an extensive surface of mortification. This man was 42 years old, had had chronic diarrhœa, and was in a feeble state of health when wounded.

No benefit was observed from any treatment. He took, in addition to the nutrients and tonics, the acid mixture with tincture of opium.

The preparation was forwarded to the Army Medical Museum.

Case III. Private Samuel Fossett, Co. I, 12th Regiment Rhode Island Vols., suffered a compound fracture of the right clavicle, by a fragment of shell, at Fredericksburgh, Va., December 12th, 1862. There was very extensive injury to the soft parts. He was admitted to this hospital December 26th.

On February 18th, 1863, a large granulating surface, two inches deep, was covered with an ashy, gray slough, and the discharge was converted from pus into an offensive ichor; the edges were thickened and everted, and surrounded by the characteristic areola of congestion, fading away into a bronzed hue.

The ulceration here attacked cicitricial tissue, which disappeared very rapidly. The entire surface was treated with nitric acid diluted, and tonics and stimulants were given internally.

The acid changed at once the character of the sore. It soon commenced to granulate, and the repair was then as rapid as had been the destruction. He was discharged the service, April 7th, for partial paralysis of the right arm, from traumatic injury of the brachial plexus.

This case was easily treated, being recognized as gangrene at once, and terminated quickly in convalescence, with a perfect recovery. The constitutional symptoms were never severe, although the man was anæmic, and had great mental despondency.

He was also removed from the crowded ward, and placed in a more salubrious one in the brick building.

Case IV. Charles Underwood, Co. D, 31st Georgia, aged 24, for a wound caused by a shell, on December 13th, 1862, at Fredericksburgh, Va., suffered an amputation of the left leg at its middle.

He entered this hospital December 25th. Nothing interesting occurred until February 20th, 1863, when a granulating surface on the face of the stump became covered with a gray slough, and the discharge was changed from pus to an offensive ichor. He was anæmic and much depressed in spirits. This case occurred in the same ward, but on the opposite side from the previous ones. The ulcer was dressed with sol. of creasote, and tonics and stimulants given internally.

On the 23d he was removed to the brick building, his ulcer freely treated with nitric acid, and then dressed with a mixture of equal parts of bals. copaibæ and ol. ricini. The ulceration had never been rapid in this case, and it was only considered specific because other undoubted cases had occurred in the same ward.

The character of the ulcer soon became changed, the granulation was rapid, and he was finally transferred to military headquarters, May 4th, 1863, perfectly recovered.

Case V. Isadore Wick, Co. D, 1st N. Y. Artillery, aged 32, had his right thigh amputated on the field, for a comminuted fracture of the tibia, received December 13th, 1862, at Fredericksburgh, Va., caused by a minie ball.

He was admitted December 26th. I regret that I can give no account of his progress, but I learned that the flaps had been insufficient, and that the stump had been closing by tedious granulation. There had been a free discharge, and his general condition was, therefore, unfitted to withstand the depressing influence of hospital gangrene. His bed was on the same side of the ward, and in close proximity to the first case reported.

The operation had been a circular one; the grannlation had entirely covered the end of the bone, and there was, when seen on the 18th February, only a narrow strip, not yet cicatrized, between the margins of the skin. This was now covered with a gray slough, and had the characteristic fetid odor. It was

dressed simply with the creasote solution, my faith in the acid treatment having been shaken by the reports of medical officers who had visited cases at Annapolis, Md.

Feb. 23*d.* The case was now considered as an unequivocal one of hospital gangrene, and was removed to the ward selected for such cases. The cicatricial tissue had all yielded to the sloughing, and the subcutaneous connective tissue had been destroyed for two inches beneath the skin at the outer angle of the original incisions. No change was made in the local treatment, as the creasote was a perfect deodorant, and as good results were hoped for, from its local use, as had been reported from Annapolis.

The destruction was limited to the connective tissue until March 9th, when there was a margin of sphacelus half an inch wide in the true skin. The constitutional symptoms had been growing more grave. His mental despondency was most marked, his face pale and anxious, his pupils dilated, his pulse 100 per minute, and feeble, and his skin very moist; a free diarrhœa had also commenced.

The tonics and stimulants having produced anorexia and nausea, were replaced by a mixture of tincture of opium and hydrochloric acid, in such proportions that he took gtt. xvj of tr. opii, and gtt. iv of acid. hydrochlor. every fourth hour. Beef essence and milk punch were given as freely as his stomach would tolerate them.

11*th.* As his general condition became less favorable, the local action was changed from molecular death to sphacelus. The whole face of the stump has now a margin of black mortification of the skin, outside of which was the usual areola of purple congestion—the complete stasis of to-day becoming the sphacelus of to-morrow. The end of the femur, protected by rosy granulations, now protrudes from the black mass of sphacelus, the integument having become loosened by the destruction of the subcutaneous connective tissue and retracted. The presence of this mass of putrefaction seems to add to the nervous prostration—if indeed the absorption of such peccant material is not its sole cause. Pure nitric acid had been applied several times, but it had been found impossible to convey it into the depths of the ulcer.

21*st.* No change except for the worse had occurred. Stimulating poultices of cinchona, ginger, and flaxseed had been used locally, but with no benefit.

Antiseptics, such as the solutions of the chloride of soda, creasote, and permanganate of potash were necessary to purify

the ward and render it endurable for his attendants. Nutrients and stimulents had been pushed to the last extent, and opium had been largely given for its supposed specific effect in the disease, as well as to allay suffering. The symptoms had been typhoid for several days; emaciation had gone on rapidly; there had been subsultus tendinum and muttering delirium with extreme prostration until this date, when death occurred.

The limb was removed after death and the specimen sent to the Army Medical Museum. The sphacelus had involved all the tissues for five inches above the divided bone, and there seemed to have been a faint effort to form a line of demarcation.

This was, at first, a very mild case, with no very decided constitutional depression, until the system seemed to be poisoned by the absorption of the products of the gangrene, when the ulceration became more rapid, and was finally, as the strength succumbed, converted into uncontrollable and rapidly extending sphacelus, accounting satisfactorily for the unfortunate result.

The treatment locally had been, first, weak sol. of creasote, gtt. iv to water ℥j, made soluble by alcohol ℥j; and second, strong nitric acid; never fully applied, however, to the depths of the deceased tissues. The constitutional treatment was stimulating, sustaining, and tonic.

Case VI. Patrick Morrisey, private Co. K, 20th Mass. Vols., aged 46, had been wounded on the 13th Dec., at Fredericksburg, and suffered an amputation of the left leg, at its middle.

He was admitted Dec. 26, 1862. There had been no union; the flaps had sloughed, and the bone protruded, as in almost every case transported hither on that occasion. He had been broken down by a free discharge and diarrhœa. His bed was in the same ward, and on the same side with the previous cases, and his wound was dressed by the same medical officer and nurses.

March 6th. His leg, for six inches above the face of stump, was swollen, erysipelatous looking, and riddled with small orifices, leading to abscesses. The face of the stump was composed of purplish, lowly organized, cicatricial tissue, upon which a patch of sphacelus, as large as a nickel penny, surrounded by the livid purple areola, now appeared. This was freely incised, touched thoroughly with pure nitric acid, and dressed with a fermenting poultice sprinkled with sol. sodæ chlorinant. Internally, gtt. xv of McMunn's elixir of opium were given every fourth hour.

This attack was ushered in by nausea, rigors, and fever; and

the patient had a desponding, yet anxious expression of countenance. His diet was "extra" with stimulants. He was at once removed from the large ward and placed in a pleasant one selected for these cases, on the second story of the brick house.

9*th*. The edges have yielded until the ulcer is now two and a half inches in diameter, covered with a tough yellow slough, which adheres strongly and extends deeply into the tissues of the centre. The pure acid was again thoroughly applied, both to the diseased surface and to the areola. Internally, a mixture of tr. opii, gtt. xvj, acid. hydrochlor. gtt. iv, every three hours, with extra diet and stimulants, was ordered.

12*th*. Ulceration was unchecked, was now three by two inches in extent, and the margins, undermined by destruction of connective tissue, were "piled up," thickened, and everted. There was diarrhœa, with decided nervous prostration. The sloughs were all removed with the forceps and scissors, until the vascular tissue beneath was reached, the sore, well dried, was thoroughly cauterized with nitric acid, and dressed with a poultice and disinfectants. Elixir vitriol was ordered for the diarrhœa.

13*th*. The appearance of the sore was improved, and the general condition was better.

14*th*. Granulations were now seen on the sore, and the areola had lost its livid hue.

April 20*th*. An immediate improvement in the general condition followed the thorough acid treatment of the ulcer. The tongue became clean, the diarrhœa was checked, the appetite returned, the food was assimilated, the whole expression of the countenance was changed from anxiety to cheerfulness, the gnawing pain was relieved, and the patient slept soundly. The appearance of the sore was also changed as suddenly from a foul, offensive, sloughing ulcer, to a rosy, granulating surface, in which repair was as rapid as the previous destruction.

This man recovered with a good stump, and was transferred to St. Elizabeth Hospital, to receive an artificial leg.

Case VII. John Jordan, private, Co. H, 2d Maine, aged 20, was struck at Fredericksburg, Va., Dec. 13th, 1862, by a fragment of shell, which passed across the right thigh below Poupart's ligament, through the scrotum, destroying the right testicle, and behind the left thigh, producing in its course very extensive but superficial wounds of the anterior portion of right, and posterior portion of left thighs. He was admitted Dec. 26, 1862, and placed in Ward No. 5.

Feb. 27, 1863. He had febrile disturbance and anorexia, a yellow furred tongue, an anxious, restless expression of counte-

nance, and a burning pain in his left thigh. There was, on the right thigh, a granulating surface three by two inches in dimensions, level with the integument and cicatrizing rapidly; a smaller, equally healthy surface remained unhealed on the scrotum; whilst on the posterior portion of the upper part of the left thigh, an ulcer, three by two inches in extent, was found, oval in shape, covered with an ashy, gray slough, with its margin thickened and everted, surrounded by a livid areola, and, instead of normal pus, discharging a thin fetid serum mixed with debris. He was at once removed to the house, the whole diseased surface was touched with pure nitric acid, and dressed with creasote lotion: stimulants and the best extra diet, with beef essence and milk punch at short intervals, and ferri. et quin. citrat. three times daily, were ordered.

March 5. The attempt to push the nutriments and stimulants produced, as it generally does, anorexia, nausea, vomiting, and diarrhœa. The tongue became thickly coated with a yellow fur, and dry and red at the tip; and so great was the gastric disturbance, that all medicines were discontinued, and the stomach allowed to recover its tone by rest, no longer being teased either by drugs or excessive and undesired nutriment.

No benefit followed the local application, and the ulceration had extended in every direction. There was the characteristic margin, preceded by the areola of livid stasis, preparing the tissues for their rapid destruction. The connective tissue beneath the skin had been destroyed, so that the skin for one inch from its margin was perfectly movable. The muscles separated from each other by the death of their connective tissue lay in the wound, bathed in its discharge, but rosy and florid, and resisting the advance of the disease.

This sore was so unmistakably hospital gangrene that several pictures of it were taken by direction of Surgeon Brinton, which represent well the surface of the ulcer, dripping with its thin serous discharge mingled with shreds of dead connective tissue, its "piled-up," thickened, and everted margin, surmounted by a thin line of vivid redness, and its broad zone of purple congestion, shading away into a bronze hue; the depth of color in the areola indicating the engorgement of the small vessels, and its hue, the feebleness and slowness of the movement of the blood.

It was determined to try the opium treatment, with hydrochloric acid as a tonic, and this mixture was given in the proportion of tinctura opii gtt. xvj, with acid. hydrochloric. gtt. iv, every three hours. The sore was dressed with a stimulating

poultice composed of flaxseed, cinchona, and ginger mixed with porter.

11*th.* Under the use of the acid internally, the tongue had become clean and moist, the tone of the digestive apparatus improved, and a fair quantity of food had been taken. Porter and ale had been given as the stomach would retain them. But little change had taken place in the character of the ulcer, which was eight inches in length by seven in breadth, extending to the perineum, and irregularly oval in shape. The muscles exposed (the semi-membranosus and biceps) had yielded, and were now almost divided. The sores on the right thigh and scrotum had not been in the least affected, *but were cicatrizing rapidly.*

The entire surface of the gangrenous sore was now thoroughly cleaned, all sloughs and shreds removed with forceps and scissors, was well dried with lint and carefully painted with pure nitric acid. The brush, charged with acid, was passed beneath the excavated margin, in some places more than an inch. The patient was etherized, and this acid application was made most carefully and completely. This was considered a *dernier resort*, for, although the capacity for taking and assimilating food seemed to have been increased by the acid treatment internally, yet his strength was daily diminishing from the exhausting discharge and from the absorption of the products of the gangrene.

On the succeeding day an entire change in the sore was observed; there had been no extension of the gangrene, the fetid odor was gone, and the discharge was more consistent and less serous. In a few days more all the shreds of dead fascia were removed, and the surface was found to be perfectly healthy. The contrast between the ragged, offensive, yellow-colored ulcer, before the last application of acid, and the florid, perfectly normal, granulating surface, which replaced it, was as gratifying as it was surprising. With the local there was also a constitutional improvement. The appetite became voracious; the patient slept well; there was no pain, and the process of repair was very rapid. The acid was continued internally.

April 1. The sore was now two by three inches in extent, and cicatrizing rapidly.

20*th.* But a small surface yet remained unhealed. The patient was in perfect health, had gained flesh very rapidly, and was now on crutches.

There was some contraction of the flexors, as the biceps and semi-membranosus were both involved in the destruction.

The most remarkable circumstance in this typical case is the fact that when the gangrene attacked the granulating surface of the left thigh, the equally large granulating surface of the right thigh was unaffected; and that whilst the gangrene was ravaging the left thigh the rapid cicatrization of the right proceeded uninterruptedly. The discharge from the left thigh was so profuse that no precaution would have prevented the virus from coming in contact with the excoriated surfaces of the scrotum and right thigh. If, therefore, the disease be propagated by inoculation, all the circumstances were favorable; since the proximity of the thighs at their upper part, and a denuded surface on the scrotum, that might act as a link, render it certain that a portion of the great discharge from the left must frequently have been placed in contact with both of the other sores. If, on the other hand, the gangrene be not a local but a constitutional disease, why should it spend itself on one granulating surface when there were two others equally obnoxious? The contrast between these sores was marked; for whilst the tissues of the left thigh were melting away under one's very gaze, the process of repair in the scrotum and right thigh was progressing as rapidly as under the most favorable circumstances. In its earlier stages this case was twice treated with nitric acid, and perhaps imperfectly, from its not having been carried into the recesses of the ulcer.

The system of urging nutrients, stimulants, and tonics, irrespective of the natural desires of the patient, is, I am satisfied, pernicious. The vital energy being depressed, the digestive organs are enfeebled; and the introduction of milk-punch, beef-essence, egg-nog, &c., with stimulants, porter, ale, &c., into an unwilling stomach, simply produces anorexia, nausea, vomiting, and diarrhœa. The tongue became furred and dry, and there was a perfect disgust for all food. The hydrochloric acid was given to correct this condition; and whether its action was confined to the stomach in rendering soluble the aliment, given in very small quantities, or whether its action was catalytic or eliminative, I shall not pretend to state, but under its influence the tongue became moist and clean, and the patient made known his desire for food. Nutrients were then given more freely as his appetite returned. The recovery of this man is due, first, to the thorough application of the nitric acid to every portion of the ulcer, which changed its specific nature immediately; and, second, to the combined effect of acid and opium internally. After the last complete application of acid the sore was changed in character, the areola disappeared, the surface became clean,

the margins lost their elevated appearance, the serous discharge became purulent, and the offensive odor was entirely destroyed. An equally marked improvement occurred in his general condition.

Case VIII. R. W. Plummer, private, Co. D, 1st Delaware Vols., aged 34, was struck on the outer aspect of the left thigh, at its middle, by a bullet, at Fredericksburgh, Va., Dec. 13th, 1862. The bullet struck against his bayonet, and penetrating his leg caused a severe flesh wound.

He was admitted Dec. 26th, 1862. The ball dropped out Jan. 1st, 1863. This was the only case of gangrene that occurred in the brick building, and appeared on the upper floor, at a distance and entirely disconnected from the wooden pavilion where the other cases were treated.

Feb. 15. The wound was almost closed.

March 9. For three days past there have been anorexia and fever. There is now an ulcer on the left thigh as large as a silver quarter dollar, with everted edges, livid areola, and a fetid discharge. The connective tissue has been removed from beneath the margins by ulceration, leaving the skin undermined. Pure nitric acid was applied to the ulcer, which was then dressed with solution of sodæ chlorinat., and tinctura opii and acid. hydrochloric. given every three hours internally.

12*th.* The ulceration having continued unchecked, nitric acid was again applied, followed by a poultice; the man was moved into the gangrene ward.

15*th.* The second use of the acid locally has changed the whole character of the ulcer. It is now about two inches in diameter, free from odor, rosy in color, and granulating rapidly.

22*d.* This improvement continued until this date, when the repair had brought the bottom of the ulcer to a level with the surrounding skin, and cicatrization had fairly commenced. There was at this time a profuse diarrhœa from some error in diet, with depression of the vital energies, which was accompanied by a relapse into the gangrene. The sore is now covered with a gray slough, is very painful, and has the characteristic areola. The expression of the patient's face is very anxious and haggard. Nitric acid was most thoroughly carried into the recesses of the ulcer, and the acid and opium mixture ordered internally.

28*th.* The ulceration has extended very rapidly, and is now a perfectly characteristic specimen of hospital gangrene. The local use of the acid seemed to do harm, since the destruction of tissue was more rapid after its application. The general

condition is alarming. There are uncontrollable diarrhœa and nausea. The pulse is very rapid and feeble, the skin relaxed, the mind dejected; and the expression of face, and the decubitus betoken profound debility. Nitric acid was again most carefully applied.

April 2d. The ulcer now measures seven by six inches. The whole surface is dripping with a fetid, sanious discharge, laden with debris of the fascia and connective tissue; the skin, undermined, is separated from its attachments for the distance of one and a half inches from the free margin, which is "piled up," everted, and surrounded by an areola of livid, bluish redness, three inches in width. The general condition is most unfavorable. There are great prostration, profuse perspiration, and diarrhœa; with a pulse of 130 and very feeble, and tongue red and dry; and a complete disgust for food, with nausea. His condition is so desperate, that I feel no hope of his recovery. The nitric acid, when last used, had only hastened the destruction of tissue, and after its failure, I was without a substitute. It had been twice used with no good effect, and had been applied most carefully to the entire surface. The nervous prostration, which is so prominent a symptom of this disease, was so profound that I think this man would have died within 48 hours, exhausted, but for the treatment employed. The constant burning pain had destroyed his rest; his diarrhœa was profuse, his skin bathed with perspiration, his stomach so irritable as to reject all nutrients and stimulants, and the expression of his face was dejected, depressed, anxious, and haggard to a remarkable extent.

The surface was again carefully cleaned of all sloughs and discharge, and thoroughly cauterized with the solution of bromine, employed by Surgeon Goldsmith, U. S. Vols., viz.:—

Bromine, ℥j; potassii bromid., ℥iij; aquæ, ℥iij. The patient was anæsthetized, and the caustic solution applied most liberally to the entire diseased surface, which was immediately deodorized, and covered with a tough yellow deposit. The sore was then covered with a piece of dry lint, a second piece of lint, wet with the bromine solution, was placed over it, upon this a piece of muslin spread with cerate, and over all a piece of oiled silk, confined closely with a roller, was bound; and the local effect of bromine was thus continued in the form of vapor. The burning pain disappeared; the antiseptic effect of bromine seemed to restore the appetite by destroying the virus that had been poisoning the whole system, and, for the first time for many days, he took some food.

May 4th. The exposure of the surface of the body to the air at this application of the bromine was followed by a severe attack of bronchitis, with vicid and bloody expectoration, and severe dyspnœa, which was treated by warm cataplasms to the chest, and by expectorants.

7th. The ulceration has ceased, the odor disappeared, and the surface is now clean and rosy. The vapor has been used twice daily. An immediate improvement followed the use of bromine, both locally and constitutionally. The pain, diarrhœa, and profuse perspiration ceased, the appetite returned, and the nervous prostration soon yielded to the extra diet and stimulants. The bromine was used twice in solution, and continued in the form of vapor until the granulations became normal.

23d. He is convalescent, and the ulcer entirely cicatrized. The bromine produced this gratifying change, after the entire failure of nitric acid; nor do I hesitate to affirm that, but for its employment, the case would have terminated fatally.

Case IX. George Zilch, Sergeant, Co. K, 7th N. Y. Vols., aged 25, had his left leg amputated at its upper-third, for a bullet wound received at Fredericksburgh, Va., Dec. 13th, 1862. He was admitted to Douglas Hospital December 26th, and placed in Ward No. 5. The stump had closed slowly by granulation, until there remained an ulcer as large as a half dime on its face.

April 14, 1863. This ulcer was inflamed around its edges, and covered with a white pultaceous slough; there was no constitutional disturbance, and the patient was allowed to remain on his crutches. The ulcer was cauterized with nitric acid, and dressed with solution sodæ chlorinatæ.

18th. The ulceration and areola are both enlarged, and the slough, yet very tough, is thicker. Acid was again used locally.

21st. He is feverish, and inclined to nausea; his pulse 120, skin hot, and tongue thickly coated. The ulcer is extending in depth, and he was removed to the gangrene ward.

22d. The solution of bromine was applied to the sore after cleansing the surface as much as possible of the tenacious slough. His general condition was unfavorable, and there was a tendency to diarrhœa and perspiration. Internally he took muriatic acid, with extra diet and stimulants.

24th. Bromine was again applied to the surface, and used in the form of vapor. The ulcer was now three inches in diameter, irregularly circular in form, with ragged, everted, and thickened edges, and surrounded by a purple areola. The slough was one inch in thickness, and resisted the action of the bromine.

26*th*. The sore is looking better; it has been disinfected since the first application of the bromine, and the constitutional symptoms are better.

27*th*. A painting in oil was made to-day, by Surgeon Brinton's direction, which would be pronounced a good representation of hospital gangrene.

28*th*. The slough is much thinner to-day, and the granulations are showing through the thin gray covering.

29*th*. The sore is much better, is becoming covered with granulations, and has lost almost entirely its specific appearance. There is no constitutional disturbance, no fever, no headache; the tongue is cleaning off, and there is a return of the appetite. The bromine vapor was discontinued, and a sol. sod. chlorinat. substituted.

30*th*. The livid areola has been changing daily in hue under the bromine treatment, has now entirely disappeared, and the sore is perfectly healthy.

May 6*th*. He is still improving, and is taking tonics and nutrients.

20*th*. The sore is reduced to half its original size, and is now cicatrizing rapidly.

24*th*. There is now a surface as large as a penny unhealed. The patient's health is very good; he is about the ward on crutches, and is no longer considered an interesting case.

We have in this case another instance in which the acid, locally used, proved useless, and in which the solution of bromine caused an immediate improvement. It was found necessary to apply the caustic solution to the ulcer three times, owing to the thickness of the slough, which was too closely attached to be removed by spatula or forceps. Its action here seemed to be to correct the fetor at once, to check the molecular death, and to change the hue of the areola, by causing a more healthy action in the capillaries. The gnawing, burning pain was relieved, and the patient was able to sleep in comfort. The absorption of the virus, produced in the ulcer was prevented by its destruction, and the nervous system quickly regained its tone.

This man steadily improved, recovered with a good stump, and was finally sent to New York to be mustered out of the service.

I will conclude this brief clinical history by a short summary.

Etiology.—This disease made its appearance in a wooden pavilion, containing fifty beds, most of them occupied by very seriously wounded men unable to leave the building, with a cubic capacity of 1050 feet to each bed, heated by ordinary radiating

coal stoves, devoid of any system of ventilation, and having no ingress for pure air, nor egress for foul, except through the windows and doors. This want of pure air was combined with a want of strict police, and a careless and unscientific method of dressing the wounds, rancid ointments being largely used instead of the ordinary water dressing.

No case of gangrene was received as such into the hospital, nor is it probable that it was otherwise introduced.

Although a majority of the cases in this ward escaped gangrene, yet there was evidently some depressing agent at work, since but few wounds healed rapidly. The patients seemed also dispirited, homesick, and moody. Those who were attacked were removed to a ward in the brick house, where they were isolated, and at the same time placed under better hygienic influences.

Two shafts for foul air, connected with the stoves, which withdrew the foul air from near the floor, had recently been placed in the ward by order of the Surgeon-General. This was not considered sufficient, and the long doors of these foul air shafts were kept constantly open. Strict attention to cleanliness and careful dressing was enforced, and, what might have been a very severe epidemic, was confined to few cases. The upper row of windows were rehung in such a manner as to direct the currents of cold air admitted in a line with the roof, and, to crown all, the *ridge ventilation* was applied to the pavilion.

These precautions, and an improvement in the diet of the house, giving more vegetables and antiscorbutics, enabled me to prevent any further serious manifestations.

No.	Names.	Ward	Side.	Date of attack.	Grade disease.	Result	Treatment.
1	Otto Kossacke	5	West	Feb. 15, 1863.	Ulceration	Cured	Nitric acid.
2	L. D. Thurston	5	"	" 15, "	Sphacelus	Death	"
3	Sam'l Fossett	5	"	" 18, "	Ulceration	Cured	"
4	C. Underwood	3	East	" 20. "	" mild	"	"
5	J. Wick	5	West	" 28, "	Sphacelus	Death	"
6	Pat. Morrissey	5	"	March 6, "	Ulceration	Cured	"
7	J. Jordan	5	East	Feb. 27, "	"	"	"
8	R. W. Plummer	1	Building	March 9, "	"	"	Bromine.
9	Geo. Zilch	5	East	April 14, "	"	"	"

There were three other wards of like construction, with Ward No. 5, but two of them were unoccupied, and the third one contained fewer, and less serious cases.

The foregoing table indicates that of the nine unmistakable cases reported, eight appeared in Ward No. 5; and that of these eight five occurred on the west, and three on the east side of the ward. Although these facts would suggest the probability of

inoculation, yet I cannot but remember that there were at least thirty-five other wounded men in this ward who escaped, although the disease had been in existence several days before Feb. 17th, when I took charge, and no precautions against contagion had been employed.

I shall not attempt to argue here the long-disputed point of contagion or *non*-contagion, but simply state it as the result of my observation, that I saw no well-marked instance of inoculation, whilst I did see many wounds escape this influence where inoculation was not only possible, but probable. Nor was it necessary to invoke the aid of any specific virus, since the unfavorable hygienic influences which had surrounded these men from the date of injury, Dec. 13th, and the date of admission into hospital, Dec. 26th, 1862, to Feb. 15th, 1863, were sufficient to produce, in all the cases treated in Ward 5, a well-marked cachexia—neither scorbutus nor anæmia, but more unmanageable than either, and due, most probably, to the absence, simply, of fresh, pure air in sufficient quantities. With no further improvements than those mentioned, a marked change for the better took place in the other inmates of this ward. Their wounds became healthy, and healed rapidly, and their spirits became cheerful.

It will be observed, from the table that I have described, two grades of hospital gangrene, the one mild, generally manageable, and characterized by ulceration or molecular death of the tissues, spending itself generally in the subcutaneous and intermuscular connective tissue; the other, more rapid in its course, more fatal, less amenable to treatment, and distinguished by sphacelus or mortification, *en masse*, of the invaded tissues. It will be seen that of the nine cases, seven are described as ulceration, and two sphacelus, and the latter both fatal.

These two cases last mentioned were entirely uninfluenced by the treatment employed. The rapid invasion and advance of the mortification, and the impossibility of reaching it with nitric acid, to influence it locally, left but little to do, but to observe its profoundly depressing effect on the vital forces. Bromine may prove the antidote in such cases, but its virtues were then unknown to me.

Treatment.—Recognizing the depressed condition of the first few cases, I endeavored to remedy it by giving at short intervals nutrients and stimulants, with such tonics as seemed proper; and milk-punch, alternating with beef-essence, porter or ale, and egg-nog, was at first given, regardless of the desires of the

patient. The ferri et quin. cit. with sherry wine was given in doses of gr. vj to x three times daily. This system was found injudicious, since it overpowered the feeble digestive organs, and caused nausea, vomiting, and diarrhœa; it was suspended, and acid. hydrochloric. gtt. iv, in combination with tr. opii gtt. xvj, were given every three hours. Under this treatment the tongue became moist and clean, and the appetite returned sufficiently to cause the patient to ask for and enjoy a reasonable quantity of food. The opium was given to allay the gnawing pain, and to give rest and sleep, as well as to obtain any specific influence over the disease which it might possess, as claimed for it by the older writers.

The local treatment consisted at first in the use of undiluted nitric acid, freely applied to the entire surface of the ulcer. The table indicates the success of that treatment. Of the nine cases, all were treated with the acid in the early stages. Of these, two were fatal, and two resisted the acid; or, in other words, in four cases it was useless. Of these four, the two fatal cases were not treated otherwise, whilst the other two were treated with success, with bromine. The five cases treated successfully with acid are marked ulceration, and were milder than those that proved fatal, or than those that were treated with bromine successfully.

The dressing, after the use of the acid, was an antiseptic wash, either of creasote or liq. sod. chlor. in a dilute solution. In some instances a yeast poultice, or a stimulating one of cinchona, ginger, and porter, seemed to assist in cleaning the surface.

Where the sore lost its sloughing character, after the use of nitric acid, the mild antiseptic washes were sufficient to encourage rapid granulation.

Of more value than the acid is the solution of bromine in water and bromide of potassium, proposed by Surgeon Goldsmith, U. S. Vols. Two cases were treated with this agent, in both of which nitric acid had failed. One of these would, doubtless, have proved fatal, whilst the other was progressing rapidly, although the acid had been used several times without benefit.

The action of the bromine is that of a caustic; all the necrosed tissues are converted into tough yellow shreds, and are perfectly deodorized. The ulceration seems to be checked at once, while the nervous system, no longer depressed by the absorption of the fetid products of the mortification, soon recovers from its depression. The areola loses its livid hue, becomes

more crimson, and finally disappears; the sloughs are rapidly thrown off, and a rosy, florid surface appears bsneath.

The bromine was also used in the form of vapor, confined to the surface by oiled silk. Its antiseptic influence is very powerful, since not the least odor could be perceived on dressing these gangrenous sores, even when they had been covered closely with oiled silk for twelve hours. From its antidotal efficacy in these two cases, I have formed a high opinion of its value in the local treatment of this disease.

Microscopy.—The discharges from several of these cases were examined, to ascertain whether some of the speculative views in regard to the presence of fungi and their influence in producing the disease could be sustained, but no fungi were found.

The discharge consisted of fluid, granular matter, and debris. The connective tissue seemed to have been broken down into unrecognizable granular material. The fibrous tissue was softened and easily teazed out, and in the muscular tissue the striated appearance was lost before the fibrous.

No evidence of textural growth was found in the discharges, although the "piled-up" and thickened margins of the ulcers would probably reveal, on examination, a multiplication of the connective tissue-corpuscles, as reported in a similar group of cases at Annapolis, Md., by Assistant Surgeon Woodward, U.S.A.

Since the preceding report was drawn up, four other cases of hospital gangrene have been observed, occurring sporadically, and treated with success with bromine. Their clinical histories are very briefly offered for consideration, in addition to those already submitted. No other cases have occurred in this hospital. It will be observed that three of these four cases were fully treated with pure nitric acid without benefit, and that the four did yield eventually to the local application of bromine. Where that remedy has required heretofore several repetitions, it would now be used more energetically. The diseased surface would be thoroughly cleansed of all sloughs, by removing those portions dead, yet tenaciously adherent, with the forceps and scissors, and pure bromine would be freely used by means of a glass pipette or a syringe. A number of the cases reported I am now satisfied would have proved fatal but for this local treatment; and it will be a proud satisfaction to Surgeon Goldsmith to know that he has not only already been instrumental in preserving so many valuable lives, but that he has provided the military surgeon with a defence against one of the most deadly and obdurate of his antagonists.

In conclusion, the writer regrets that circumstances do not

permit him to render these clinical histories more acceptable to the critical reader. The report was made to the Surgeon General for the future use of the surgical historian of the war, and now meets the public eye in this crude form because it has been represented that further evidence as to the virtues of bromine might be of service in the exigencies of the coming campaign.

Case X. Michael Flood, age 24, priv. Co. D, 33d N. Y. Vols., was struck by a minie ball at the battle of Chancellorsville, May 3d, 1863, which entered the right thigh anteriorly, comminuted the femur for four inches at the junction of the middle and upper-third, and escaped posteriorly. He was admitted on the 8th of May. This man had been suffering from diarrhœa, and was in a feeble condition. The usual profuse suppuration followed the injury, thus reducing his strength still further. The leg was lightly dressed, was supported by sand-bags, and extended by means of a brick attached to the limb by a band of adhesive plaster. On July 23d, the inner surface of the thigh, at its middle, was found red and inflamed opposite the seat of fracture, and in the centre of this diffused redness there was a spot very tender on pressure, slightly softened, and indicating an approaching abscess. This was treated with a poultice. On the 24th, a small black spot of sphacelus was observed in the centre of this inflamed region, which was easily detached, and then revealed a sloughing condition of the connective tissue.

No previous abrasion of the skin existed, nor any wound which would have permitted of inoculation; nor was there any other case of gangrene then under treatment. The diarrhœa simultaneously increased, and the patient's condition became rapidly worse. The ulcer was treated with the solution of bromine and bromide of potassium. This was followed on the following day by pure nitric acid, with the apparent effect of adding to the rapid destruction of tissue. On the 27th, the ulcer was in dimensions five by four inches, with irregular, ragged edges, everted, thickened, and extensively undermined at the margins; and, in a word, presented the characteristics of severe hospital gangrene. It was now thoroughly treated with pure bromine. The improvement was marked; the ulcer became deodorised; lost rapidly its sloughing, ragged look; became clean, then florid, from rapid granulation, and in a few days was converted into a perfectly healthy, rosy surface. The man's broken condition gave no hope of his recovery. There was still a free discharge from his fractured femur, his diarrhœa continued unchecked, and from these he sank exhausted, and died on the 6th of August. The gangrene here did not attack

the gunshot wound through which the discharge from the seat of fracture escaped, but invaded a new unwounded surface, and one upon which no abrasion was known to exist. The gangrene was perfectly removed previous to his death.

Case XI. P. C. Barton, Co. D, 26th New York, age 25, was struck at Chancellorsville, May 23d, 1863, by a piece of shell, which comminuted with extensive laceration the right tibia and fibula, at the middle, and fractured the right femur at the junction of the lower and middle-third. This was a most severe wound, since the soft parts were so greatly injured. He was admitted on the 8th, his leg placed in a bran-box, and slight extension attempted by fastening the foot to the foot-board and elevating the lower end of the bedstead. Profuse discharge and occasional attacks of diarrhœa reduced his strength, whilst his wounds were undergoing rapid repair. On July 1st, he was removed to a ward filled with other wounded men, and in a few days the granulating wound on his leg became grayish, and the discharge thin and offensive. The wound of the thigh had almost closed. This was recognized as mild hospital gangrene, and was treated with strong nitric acid, followed by yeast poultices. No improvement followed. The cicatrized tissue, the offspring of the previous repair, was rapidly removed, the ulceration spread under the sound integument, and the sore assumed the characteristic appearance of gangrene. Stimulants and mineral acids were given internally, but rapid emaciation and general prostration ensued from the continuance of the diarrhœa. The sore was then treated with the solution of bromine, but required several applications to check the ulceration. Pure bromine would now be employed in such a case. This man was moved to a better ward on July 30th, and the ulcer was then seven inches in length by four in width, occupying the outer side of the right leg.

Soon after his removal an abscess formed in the outer portion of the right thigh, the pus was evacuated, and gangrene immediately attacked the walls of the cavity; this extended with great rapidity, became four by three in extent in two days, and was immediately arrested by the bromine. No hope whatever was entertained of this man's recovery. A severe comminuted fracture of both bones of the leg, a compound fracture of the same femur, and two severe attacks of gangrene, combined with an obstinate diarrhœa, had brought him to the last stages of exhaustion. By the 12th of August his ulcers were normal in appearance, and were granulating rapidly; the bones had united, and his diarrhœa had been checked by nitrate

of silver and opium. The improvement was gradual, but constant; his stomach recovered its tone, the quantity of food was increased; his whole condition became more favorable, and he was finally sent home on the 20th of September, his term of service having expired. He was able to travel safely, and his wounds were almost closed.

Case XII. Wm. Hutchinson, age 32, Co. F, 107th New York, was struck by a bullet at Chancellorsville, May 3d, 1863, in the middle of the right tibia, which comminuted the bone, without, however, fracturing it through. He was admitted June 17th; the wound was discharging freely, and, shortly after his admission, several fragments of bone were removed. He was kept quiet in bed and his leg dressed with water. On the 10th of August, the open wound lost its healthy look, and the discharge became thin and offensive. On the 18th, the case was beyond doubt a mild one of hospital gangrene. There were the burning pain, the livid areola, the thickened everted edges, and the deep, tenacious, gray slough occupying the former seat of the opening. No effort was made to remove this necrosed tissue, and hence the application of the pure bromine produced less than the usual effect. For six days after the 18th, the bromine was applied daily, and followed by yeast poultices. No ulceration occurred after the first application; but at the expiration of the time stated, a florid, healthy surface replaced the gangrenous one; the excavation was deep and extensive enough to contain a large egg. After this complication the wound filled up rapidly, the man received a furlough, but was enfeebled by the long-continued discharge resulting from local necrosis.

Case XIII. James Hogan, age 47, private Co. A, 127th Pa. Vols., was struck at Fredericksburg, Va., December 13th, 1862, by a minie ball, which comminuted his right tibia. A resection of six inches of the shaft was performed at a field hospital. The fibula was uninjured. A tedious and almost hopeless convalescence, and the removal of sequestra from both upper and lower extremities of the tibia, found him, after the closure of the extensive incision, in good health, and with only a very small granulating surface near the tubercle of the tibia unhealed. This was attacked by hospital gangrene, was treated ineffectually with nitric acid, and penetrated so deeply as to make the involvement of the knee-joint probable.

Two or three applications of pure bromine at once checked the destructive action, but not until an opening large enough to receive a hen's egg had been produced. The granulation was

rapid; the constitutional symptoms of gangrene soon disappeared, and the man recovered with a perfectly useless leg, since a hiatus of eight inches remained between the two extremities of the tibia. He was sent home on Oct. 12th, 1863, in good health, his term of service having expired.

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ON THE PHYSIOLOGICAL EFFECTS OF TOBACCO.

BY DR. RICHARDSON.

This paper is a very valuable addition to the literature of smoking, dealing with the composition of the products of combustion of tobacco, the physiological action of the various compounds thus derived, and the effects of ordinary and excessive smoking on the organs of the body. The following bodies are products of the combustion of tobacco:—1, water; 2, free carbon; 3, ammonia; 4, carbonic acid; 5, an alkaloidal principle called nicotine; 6, an empyreuamtic substance; 7, a resinous bitter extract. The water is in the form of vapor; the carbon is in the form of minute particles suspended through the water vapor, and giving to the eddies of smoke their blue color; the ammonia is in the form of gas combined with carbonic acid; the carbonic-acid gas is partly free and partly in combination with ammonia. The nicotine is a non-volatile body, an alkaloid which remains in the pipe; the empyreumatic substance is a volatile body, having the nature of ammonia, but the exact composition of which is as yet unknown. It is this that gives to the smoke its peculiar odor; it adheres very powerfully to woollen materials, and, in the concentrated form, is so obnoxious as almost to be intolerable. The bitter extract is a resinous substance, of dark color, and of intensely bitter taste. It is, probably, a compound body, having an alkaloid as its base. It is not volatile, and only leaves the pipe by being carried along the stem in the fluid form. The greatest variations exist in various kinds of tobacco. Simple tobacco that has not undergone fermentation yields very little free carbon, much ammonia, much carbonic acid, little water, none or the smallest possible trace of nicotine, a very small quantity of empyreumatic vapor, and an equally small quantity of bitter extract. Latakia tobacco yields these same products only. Bristol bird's-eye yields large quantities of ammonia, and very little nicotine. Turkish yields much ammonia. Shag tobacco yields

all the products in abundance, and the same may be said of pure Havana cigars. Cavendish varies considerably; some specimens which are quickly dried are nearly as simple as Latakia; other specimens which are moist yield all the products in great abundance. Pigtail yields every product most abundantly. The little Swiss cigars yield enormous quantities of ammonia, and Manillas yield very little.

The physiological effects of these compounds are as follows: —The water vapor is innocuous; the carbine settles on the mucous membrane, and irritates the throat. The carbonic acid is a narcotic if it be received into the lungs. The ammonia causes dryness and biting of the mucous membrane of the throat, and increases the flow of saliva; absorbed into the blood, it renders that fluid too thin, causing irregularity of the blood corpuscles; it also causes, when absorbed in large quantities, suppression of the biliary secretion and yellowness of the skin; it quickens and then reduces the action of the heart, and, in young smokers, it produces nausea. The empyreumatic seems to be almost negative in its effects, but it gives to the tobacco-smoke its peculiar taste; and it is this substance that makes the breath of confirmed smokers so unpleasant. Nicotine is scarcely ever imbibed by the cleanly smoker; it affects those only who smoke cigars by holding the cigar in the mouth, and those who smoke dirty pipes saturated with oily matter. Its effects when absorbed are very injurious; it causes palpitation, tremor, and irregular action of the heart; tremor and unsteadiness of the muscles generally, and great prostration. It does not, however, produce nausea or vomiting. The bitter extract is the cause of vomiting and nausea when it is absorbed; both it and the nicotine are always received into the mouth in solution, and produce their effects, either by direct absorption from the mouth, or by being imperceptibly swallowed and taken into the stomach.

The greatest difference arises from the manner of smoking. Those who use clean, long pipes of clay feel only the effects of the gaseous bodies and the free carbon. Wooden pipes and pipes with glass stems are injurious. Cigars smoked to the end are most injurious of all. To be safe, a cigar ought to be cast aside as soon as it is half smoked; and every cigar should be smoked from a porous tube. Cigars, indeed, are more injurious than any form of pipe; and the best pipe is unquestionably what is commonly called a "churchwarden," or "long clay." After the clay pipe, the meerschaum is the next wholesome. A pipe with a meerschaum bowl, an amber mouth-piece, and a clay stem, easily removable or changeable for a halfpenny, would be the

beau ideal of a healthy pipe. A man may, by practice, become habituated to a short foul pipe, but he never fails to suffer from his success in the end, nor, unless the habit of actual stupefaction be acquired, is any pleasurable advantage derived.

The effects of moderate and immoderate smoking on the organs of the body were stated to be as follows:—In an adult man, who is tolerant of tobacco, moderate smoking—say to the extent of three clean pipes of the milder forms of pure tobacco in the twenty-four hours—does no great harm. It somewhat stops waste, and soothes; but there are times when it unsettles the digestion. To an immoderate degree—say to six or eight pipes a day, especially if strong tobacco and fine pipes be used—smoking is unquestionably very injurious to the animal functions. The blood is made too fluid; the biliary secretion is arrested; and the digestion is constantly deranged; there is dryness of the tongue and frequent nausea. On the heart the symptoms are very marked. They consist of palpitation, a sensation as though the heart were rising upwards, a feeling of breathlessness, and, in bad cases, of severe pain through the chest, extending through the upper limbs. The action of the heart is intermittent, and faintness may be experienced. Extreme smoking is also very injurious to the organs of sense. In all inveterate, constant smokers, the pupils of the eye are dilated, owing to the absorption of nicotine, and the vision is impaired in strong light; but the symptom which most of all affects the vision is the retention of images on the retina after the eye is withdrawn from them. Thus, if he turn his eyes from a window, he retains the impression of the window, the panes seeming red and the bars dark. When such pictures are seen for some minutes, the smoker may be assured that he has carried his indulgence out of the pale of safety. On the sense of hearing inveterate smoking produces disturbances; these consist of restless deafness, and ringing or whistling in the ears. The circulation of the brain is also sometimes disturbed, and giddiness and vertigo are produced. The muscles, after extreme smoking, are prostrated. Long smoking also affects the mucous membrane of the mouth, causing "smoker's sore throat." There are also other effects occasionally produced in the mouth—viz., sponginess of the gums and tartar on the teeth. On the whole, however, smoking does not injure the teeth. These are the worst effects of tobacco; they all point to functional disturbance. The question remains whether worse effects ever follow from over-indulgence in smoking. The great effect of tobacco is to arrest the functional processes on which growth and development

depend. To the whole body of the growing youth, therefore, the act of smoking is decidedly deleterious. Dr. Richardson could not dwell too forcibly on this point. He did not say that any one particular disease was brought on, but that a general deficiency of power was induced. When, however, the body has ceased to grow, the effects of tobacco in this regard were not felt; and, when the body was falling into decay, smoking seems conservative in its action. The author had met many instances of extremest old age in confirmed smokers. As regards the production of specific diseases by tobacco, the hypotheses that have been raised are too loose to be accepted. It is said that tobacco dulls and destroys the mental faculties. The facts are that, when the body is in full vigor, smoking does lessen the power of the faculties; but, when the body is overworked and worn, tobacco soothes and conserves. If there were any foundation in the idea that tobacco produces insanity, the fact would be at once broadly marked in the difference of numbers of the insane in the different sexes. This remark is, however, less applicable to paralysis. It has been urged that tobacco produces cancer; the statement is utterly groundless. Neither consumption nor bronchitis, in the chronic form, can be induced primarily by smoking. At the same time it must be added that smoking does mischief in both these disorders when they exist, except in asthma. In the main, smoking is a luxury which any man is better without. Of nearly every luxury, tobacco is the least injurious. It is innocuous as compared with alcohol; it does infinitely less harm than opium; it is in no sense worse than tea, and, by the side of high living, altogether contrasts most favorably. — *Proceedings of the British Association*, in *London Reader.*

THE TREATMENT OF ALBUMINURIA IN CHILDREN.

At a recent meeting of the Royal Medical and Chirurgical Society, a paper was read on this subject by Dr. W. H. Dickinson, of which we copy an abstract and the discussion following it, from the *Medical Times and Gazette:*—

"The granular kidney appears to be unknown in childhood. The only form of disease which produces albuminuria at this period of life, is that which produces enlargement of the kidney and gives it a smooth mottled exterior. This is, in fact, a renal catarrh. The tubes become obstructed by an excess of their own epithelial growth, and hence arise all the evils of the disease. If only there is a free escape of the contents of the tubes,

the vascularity of the gland will be relieved by secretion, and the disorder will soon be at an end. The principle of treatment must be to send as much water as possible through the organ. This fluid is devoid of irritating properties, and probably passes through the gland rather by filtration than true secretion. With these views the patients were restricted to a fluid diet. They took from two to four pints of distilled water daily, and small doses of the infusion of digitalis. When the active symptoms had subsided, iron was given. Twenty-six cases were adduced in which this treatment had been pursued. Twenty-two recovered completely; three were lost sight of while improving, but while still having a small quantity of albumen in the urine; one case did badly, and eventually died under other treatment. Many of the cases were of great severity. These results appear better than those afforded by other methods. Among the in-patients at the Children's Hospital otherwise treated, 11 died out of 39; and of 69 cases treated by Dr. Miller in Dispensary practice, 8 died. It was found that on an average the little patients were restored to apparent health in 30 days, while 15 days more were needed to get rid of the last traces of albumen. The use of the water did not seem in any case to increase the dropsy, but the contrary. It was usual, however, when the swelling was great, to let the digitalis set up a certain amount of diuresis before ordering the full quantity. The subsequent use of iron was believed to correct the effects of the disease, without influencing the disease itself. On the occurrence of secondary disorders, such as convulsions or acute inflammatory attacks, it was argued that the treatment of the renal mischief should be sedulously persisted in, with such additions as might be called for. The anæmic state of brain, in uræmic convulsions, and their frequent occurrence after the exhaustion of diarrhœa or vomiting, were urged as reasons for abstaining from depressing remedies. A case was cited in which, under these circumstances, small doses of opium had been used successfully. A case was also given in which acute pleurisy had passed off under the use of only local measures. The paper professed to deal only with the albuminuria of childhood.

Dr. Fuller had had opportunities of witnessing the author's treatment, but chiefly in adults, in whom it was not so successful as in children. In adults the renal affection was of longer standing. He had tried it in a child in private with success. It was successful in the dropsy of adults, but not so uniformly so as in dropsy in children after scarlet fever. If Dr. Dickin-

son's views were correct, it was easy to understand that it should be more useful in children than in adults.

Dr. Basham said there were many points of practical value in the paper, and yet one or two things for comment. First, in cases where the renal affection followed scarlet fever, let the treatment be what it might, the majority of patients did well. No doubt the diuretic influence of water was beneficial, but he thought the theory brought forward was open to a difference of opinion. He ventured to think that there was not merely a blocking up of the tube, but also some change of the gland-cells—they had become effete cells, and accordingly were thrown off, and these, of course, obstructed the tube. But we know that nature tries to get rid of them, and no doubt diluents are of help in this way. He should, however, think the natural tendency of such cases to do well had more to do with recovery than the treatment.

Dr. Hillier had tried Dr. Dickinson's plan, and had found it scarcely so satisfactory. He (Dr. Hillier) agreed with Dr. Basham, that such patients, however treated, if seen early, would nearly always do well. His plan of treatment was to keep them in bed, to use hot-air baths, to give purgatives, and good diet. Occasionally he had under care a severe case, and then had tried the water plan, but had been obliged to resort to other means. Perhaps, however, he had been too timid. In one case purpuric symptoms came on. There was considerable hæmaturia and epistaxis. With the water treatment the patient did worse, but when it was given up, and gallic acid was administered, the patient recovered.

The Author, in reply, said that he was quite aware that the majority would get well if left alone, but a great number would not. He had been able to collect a large number of cases of deaths in the *most mortem* books of St. George's Hospital. In reference to Dr. Basham's remarks, he said that the first changes were, he believed, in the quantity and not in the quality of the epithelium. In reference to Dr. Hillier's want of success, he would fall back on the explanation which Dr. Hillier himself had suggested, viz., that the treatment was not persevered in. The only fatal case in the paper was the one in which the vapor bath had been used.

Mr. Bainbridge asked if the treatment would have been equally successful without the digitalis? He had seen many such cases during the last month, and the patients generally were thirsty, and as a consequence, without any special direction, drank a great deal of water.

The Author said that the water treatment had been tried alone in three cases.

Dr. Stewart related a case of dropsy following scarlet fever, occurring in a woman who had recently been confined. Suddenly convulsions came on, followed by unconsciousness. Cupping the loins, and other measures, were followed by success, and he thought it a case in which the the use of diluents would not have led to an equally favorable result.

Dr. Basham said that he thought that if any pathologist well versed in the use of the microscope would examine the gland cells of the kidney of a child who had died by accident, and then those of one who had died from renal disorder, he would find a well-marked difference. In the latter the cell was cloudy and the nucleus obscure. It had become an effete and imperfect cell.

Dr. Fenwick said that he had examined the mucous membrane of the stomach in scarlet fever patients, and had found changes in the epithelium there as well as in that of the kidney.

In reply, Dr. Dickinson said that no doubt there was a change in the cells, but not primarily."

THE DEGENERATION AND REGENERATION OF THE NERVES.

M. Vulpian has lately discoursed on this very interesting subject in his lectures at the Museum of Natural History in Paris. The physiological property of motor and sensitive nervous fibres is the property of undergoing certain modifications under the influence of some agent. This property belongs to the nerve-fibre, independent of the nervous centers. "I am thoroughly convinced," says M. Vulpian, "that the origin of this property of the nerve is to be sought for in the nerve-fibre itself. Our classical works tell us that the nerves borrow their force or property from the nervous centres; but this is a complete error. If a motor nerve received its properties from the spinal marrow, it ought to lose them when cut; but it does nothing of the kind; for when the peripheric end of the cut nerve is excited, the muscles contract; and, more than this, when its nerve-force has been exhausted by long and continued excitation, it recovers its force under repose. It is strange that this simple demonstration has not convinced every one.

In considering the phenomena attending the disappearance of the nerve-force, we have to observe—1. The duration of the excitability of the nerve after section; 2. The mechanism of its disappearance.

In 1838, Muller investigated the first of these questions—the duration of the excitability of the nerve; and he concluded that it disappeared after some weeks. In 1840, Gunther and Schon made similar observations; and in 1841, M. Longet obtained similar results. It was also noted, that when, after section, the nerve had lost its properties, the muscle to which it was distributed still preserved its power of contractility—showing the independence of muscular irritability. Brown-Séquard and Martin Magron have seen muscular irritability last longer than two years in certain animals, although every trace of excitability had disappeared in the nerve which had been cut and passed into the muscles. Another proof of the fact that muscular contractility is independent of nervous excitability has been given by M. Bernard. He has demonstrated that, when the action of the motor nerves over the muscles is absolutely arrested, muscular irritability, contractility may still exist.

The question as to how the nerve loses its properties is of the highest interest, and its answer will give us a key to some of the most interesting phenomena which have exercised the sagacity of physiologists.

The force or property of the nerve disappears as a consequence of alteration of the nerve-substance; but this alteration is not appreciable by our means of investigation until the nerve-force has completely disappeared. The changes of degeneration which go on in the cut nerve are influenced by different circumstances. Thus the changes go on more rapidly in a young man than in an old animal. In the young, the complete change is effected in about two months; but in an old animal, not before six or seven months. The species of animal and season of the year also modify the result.

According to M. Waller, the change of structure of the nerve is due to interference with the nutrition of the nerve-fibres. The spinal marrow, in his view, is the centre of nutrition of the nerves—of the motor nerves, at least; so that, when the nerve is cut, its nutrition is disturbed, and change in structure results. M. Waller cut both the roots of a spinal nerve; and he found that change of structure did not occur in both of the so cut nerves. In the anterior root, he found the peripheric end alone degenerated; and in the posterior root, the central end. Hence he drew the conclusion, that the sensitive fibres have for their

nutritive centre the ganglions of the posterior roots. This deduction is strengthened by the fact that, when the posterior root was ligatured beyond the ganglion, the outer end—the peripheric—was altered in structure.

On the same basis of facts, M. Schiff has made many interesting researches concerning recurrent sensibility. He cut the anterior root, and found, as Waller had done, that the peripheric nerve-fibres were changed, and that the central ones remained healthy. But he also found that some of the fibres in the peripheric cut end of the nerve remained sound; and that some in the central end were altered. And of these fibres, those which remained unchanged in the peripheric end, and those which were altered in the central end, were evidently fibres emanating from the posterior root. Hence the conclusion that recurrent sensibility is due to recurrent nervous fibres. How the grey substance can have a nutritive influence over the anterior root, and the ganglion over the posterior root, remains to be shown; but the fact appears certain.

In this way Waller has discovered an excellent means of studying the distribution of nerves by alteration of their fibres, and of recognizing in a mixed nerve the fibres which are sensory, and those which are motor. To this method of observation Waller has given the name of "new anatomical method."

We may, indeed, expect great results from this "method" of observation. Thus, for example, we know the union of the spinal accessory with the pneumogastric nerve. Well, if we divide the roots of the spinal accessory, wherever we find in the divisions of the pneumogastric altered nerve-fibres, we may safely say that they are fibres of the spinal accessory. If, again, we wish to know whether the nervus petrosus is a branch of the facial or of the fifth pair (through the pheno-palatine ganglion), we cut the facial nerve, and examine the petrous nerve, in the course of ten to fifteen days. We then find in it a mixture of healthy and changed nerve-fibres, and from this fact are justified in concluding that the petrosal nerve has a double origin. Again, does the chorda tympani go to the tongue? No; because, after cutting the facial, there is not found in the lingual a single fibre changed, beyond the fibres the submaxillary ganglion furnishes to the gland. These are examples of the value which this new method of observation renders to physiology and pathology.—*British Med. Journal.*

Editorial.

Chicago Medical Society.—The regular weekly meeting of this Society, on Friday evening last, was well attended; and the proceedings were interesting and profitable.

We select the following items as worthy of record:—*Triticum repens or Couch Gross.*—Dr. Waite called the attention of the Society to the efficacy of this article in relieving chronic irritation and inflammation of the bladder. He related two cases of long standing and great severity, which had been relieved by it. They were both in men past the middle period of life, and were well marked cases of chronic inflammation. The remedy was used in the form of infusion, made by putting a pint of boiling water on an ounce of the herb; of which a wineglassful may be taken every two, four, or six hours, according to the urgency of the symptoms.

Chronic Diarrhœa of Camps.—Dr. Peterson alluded to this disease for the purpose of stating that he had treated several cases with satisfactory success, by giving a combination of sub. nit. bismuth, sub. carb. ferri, &c., according to the following form:—

℞. Sub. Nit. Bismuth, ---------- ℈ij.
Sub. Carbonate of Iron, ---------- ℈j.
Sulph. Morphine, ---------- 1gr.

Mix, and divide into eight powders; one of which may be taken every three, four, or six hours, according to the frequency of the evacuations.

Hemorrhoids.—Dr. H. Wanzer related a case of hemorrhoidal tumors of long continuance, and which was accompanied by such a degree of pain and spasmodic action in the sphincter ani as to be hardly endurable. Finding the tumors too large and indurated to remain reduced when carefully returned above the sphincter, he extirpated them by ligatures. The recovery was complete, and without any bad symptoms.

Cases of Neuralgic Rheumatism.—Dr. N. S. Davis read a report of several cases, which elicited some discussion; during

which, the fact that cases of irregular and unusual attacks of a rheumatic nature, was made apparent. The cases, as reported, will be found in another part of this number of the EXAMINER. At a previous meeting, a question had arisen, whether a regularly educated physician, who had formerly violated the Code of Ethics, by newspaper and handbill advertising, in reference to the treatment of particular diseases, &c., but who, for four or five years past, had abandoned such practices and conformed his conduct to the ordinary rules of the profession, should be elected a member of the Society. The question was referred to a committee of three, who made the following report:—

The Committee appointed to report in reference to the admission of applicants for membership, who had at some previous time been guilty of violating that rule of Ethics relating to advertising, &c., would ask leave to report as follows:—

The section, in the established Code of Medical Ethics, relating to this subject, is as follows:—

"It is derogatory to the dignity of the profession, to resort to public advertisement, or printed cards, or handbills, inviting the attention of individuals affected with particular diseases—publicly offering advice and medicine to the poor *gratis*, or promising radical cures; or to publish cases and operations in the daily prints, or suffer such publications to be made; to invite laymen to be present at operations; to boast of cures and remedies; to adduce certificates of skill and success; or to perform any other similar acts. These are the ordinary practices of empirics; and are highly reprehensible in a regular physician."

The question referred to your Committee may be stated briefly in these words:—Is it consistent with the interests and honor of the Society to elect to membership any individual who had deliberately violated the first part of the foregoing rule, by advertising to cure particular diseases, both in the public prints and in handbills, &c.; but who, for one or more years previous to asking admission into the Society, had entirely discontinued such advertising, and manifested a sincere desire to conform his conduct to the established rules of the profession?

That the Society has a right to admit such an individual to membership, there can be no doubt.

If the Society was an incorported one, intended to embrace all regular physicians, and to the members of which were secured certain legal rights and privileges, as is the case with the State and County Medical Societies in the State of New York, it might be the *duty* of the members to admit such an applicant, as is supposed in the question referred to the Committee. It was, at least, so decided *judicially* in a recent case, of a somewhat similar charcter, in connection with the Erie County Medical Society, in that State. But if the organization of the Society is, like ours, purely voluntary, and for the mutual improvement of its members, without legal existence or legal privileges, then certainly no member of the profession can claim admission as a right; and much less can it be claimed as a *duty* of the Society to elect such an applicant as is contemplated in the question referred to the undersigned for consideration. Under such circumstances, the question of admission or rejection becomes one of mere expediency, to be decided, not by the wishes of the one who may be proposed for membership, but by the influence it may have on the interests and honor of the Society itself. A physician, who has deliberately violated the established rules of Medical Ethics, and subsequently repents, and abandons such violations, should, like all other repentant sinners, be forgiven by his medical brethren, just as far as his repentance is known to them. But when a regularly educated physician, and graduate of a respectable medical school, causes to be published extensively in the newspapers in different localities, advertisements claiming superior success in the treatment of particular diseases, and sends handbills broadcast upon the community making the same pretensions, his name becomes indissoluably associated, in the professional mind, with *quackery.* And though he may subsequently withdraw his advertisements, and cease to distribute his circulars, and so far regulate his conduct by the rules governing all respectable physicians, as to satisfy his immediate neighbors in the profession, yet over all the territory reached by his previous advertisements, his name

remains with its old association uncorrected. Hence any mere voluntary medical society or association, that should place such a name on its list of membership, would necessarily incur the odium, everywhere beyond the personal acquaintance of its members, of an association with charlatans and newspaper puffery. Your Committee, therefore, unanimously recommend that no such individuals be admitted as members of this Society, unless, in addition to the abandonment of their irregular practices, they make the fact of such abandonment as fully and extensively *public* as their previous advertisement and circulars have been.

All of which is respectfully submitted.

N. S. Davis,
A. H. Thompson,
John Reid.

Mortality of Chicago.—The whole number of deaths in this City for each of the last five years, ending December 31st, 1864, is as follows:—

1860.	1861.	1862.	1863.	1864.
2,056	2,069	2,575	3,522	4,060

The population of the City, during the same time, is officially reported as follows:—

1860, ---------- 110,973
1862, ---------- 138,835
1864, ---------- 170,000

This indicates a ratio of one death in every *fifty-three* of the population, for the first three of the five years, and one in every *forty-one* for the remaining two years. If we compare these statistics with those on the same subject furnished by other large cities, either in this country or Europe, we shall find few, if any, of equal population, to present as low an average ratio of mortality for the last five years.

This very gratifying result is not owing to any superior hygienic regulations devised and enforced by the municipal authorities of Chicago, or to the absence of such causes as tend to deteriorate the health of cities generally.

But it is owing mainly to these circumstances, namely: first,

our streets are nearly all broad, straight, and intersect each other at right angles; second, the nature of the soil is such that no families live in cellars or basements below the natural level of the earth's surface; and third, the broad lake on the east, and the open, unobstructed prairie on the west, causes the winds from either direction to sweep freely through every street and alley in the City. This unusual freedom of ventilation is, undoubtedly, the most important conservator of public health that our City enjoys. With the same causes existing, calculated to impregnate both the air and the water with impurities, if any considerable part of our population had been crowded into basements, or narrow, crooked streets, admitting of only imperfect ventilation, the ratio of mortality would have been greatly increased.

But, with all the advantages of broad streets and the greatest freedom of ventilation, the reader will not fail to notice a marked increase in the ratio of mortality during the last two years, as compared with the three immediately preceding. This, when the attendant circumstances are understood, is a fact of great interest to the students of *etiology* generally, as well as to the people of Chicago. It was not until the last two years that the blood and offal of the packing houses and their appendages mingled with the sewage matter of the Chicago river so freely as, not only, to furnish gaseous emanations sufficient to impregnate the whole atmosphere of the city, but also to taint the water along the lake shore to such an extent as to be returned through the hydrants into every house, nauseous both in taste and smell. The first special prevalence of disease following this state of things, which attracted attention, was a pretty severe epidemic of erysipelas, commencing in September, 1863, and continuing until the middle of the following winter. And sporadic cases of the same disease have continued to occur more frequently than formerly up to the present time. The dysenteries occurring during the autumn of both 1863 and 1864, were more obstinate and protracted than usual. And cases, both of diarrhœa and dysentery, were met with much more frequently than in former years, during all the winter of 1863-4,

and have been, also, thus far, during the present winter. From the decline in the epidemic of erysipelas, just alluded to, up to the present time, cases of continued fever have been more numerous in proportion to the population than in previous years. They have also, especially during the last six months, presented much more prominently the characteristics of *Typhus*. Without alluding to other, and less important, changes in the character and prevalence of diseases, we cannot hesitate to attribute those already mentioned, to the direct influence of the decomposing animal matter that has so strongly impregnated both the air and water of our city for the last two years. This conclusion is also corroborated by the change in the ratio of mortality in the different seasons of the year. The mortality for each quarter is as follows:—

	1860.	1861.	1862.	1863.	1864.
1st quarter,	423	500	570	908	1060
2d do	388	391	509	776	869
3d do	613	728	849	996	1319
4th do	477	470	645	842	806

A glance at this table will show that, during the last two years, the ratio of deaths has been much more equally distributed through the different quarters of the year, thereby indicating the existence of some more constantly acting cause, aside from the ordinary meteorological influences. But we have not time to pursue the subject further at present.

Profits of Medical Practice in Chicago.—Some of the daily newspapers in this city, having published a complete list of the taxable incomes of our citizens, of all classes, as returned to the office of the Assessor of Internal Revenue, for 1863, we had the curiosity to examine so much of the list as related to the incomes of members of our profession.

By an examination of the City Directory, we were able to identify the names of 120 regular physicians and surgeons, actually engaged in the practice of their profession in this city. Also 25 homœopaths, and about 20 advertising quacks. Of the first 120, we were able to identify only 41 as having returned

any amount of taxable income, above the legal deductions, for the year 1863.

The amount of taxable income returned by the 41, whose names were on the printed list, ranged from $75 to $6041. Of the whole number 1 only reported over $5000; 4 between $3000 and $5000; 11 between $1000 and $3000; 16 between $500 and $1000; 9 below $500.

Of the 25 homœopathic practitioners, we identified the names of only 10, in the published list, as returning some amount of taxable income. Of these, 4 ranged between $1000 and $2000; 3 between $500 and $1000; and 3 less than $500. The highest in this list was $1888, and the lowest $214. Of the 20 or more puffing newspaper advertising quacks, under the title of *Doctor*, only 6 returned a taxable amount of income. The amounts varied from $120 to $4400. The reader must bear in mind that none of these figures represent the *gross* amount of professional income, but only the taxable part, after all legal deductions have been made.

It will be seen that the figures we have given very fully disprove the assertion frequently made, that the community pay homœopaths and quacks much better than the regular profession. A glance at the amount of taxable income returned by many of the most prominent practising lawyers in the city, also satisfied us that, as a whole, the medical profession is quite as profitable as the legal.

Transactions of the Illinois State Medical Society.—The volume of Transactions of our State Medical Society for 1864 is now complete and ready for distribution. Copies will be mailed to all members who have paid their dues for 1864.

The present volume is one of more than usual interest. Besides the ordinary record of proceedings at the last meeting, it contains a Report on the Epidemic Diseases and Improvements in Practical Medicine, for the year ending March 1st, 1864; by N. S. Davis, M.D., of Chicago. A Paper on Cerebro-Spinal Meningitis, by R. E. McVey, M.D., of Waverly, Ill. A Report on Orthopedic Surgery, by David Prince, M.D., of

Jacksonville. A Report on Puerperal Fever, by DeLaskie Miller, M.D., of Chicago. A Report on Surgery, by E. Andrews, M.D., of Chicago. And a Paper on "Spotted Fever," by J. A. Allen, M.D., of Chicago.

Illinois State Medical Society.—The next regular Annual Meeting of the Illinois State Medical Society, will be held in the City of Bloomington, on the first Tuesday in May, 1865. The Profession of the State are earnestly requested to make the meeting a full, interesting, and profitable one.

N. S. DAVIS, *Permanent Secretary.*

Chicago, Jan. 15th, 1865.

The Yellow Fever in Newbern, N. C.—A writer from Newbern, speaking of the great conflagration that ocurred in that city on the 19th of Nov., says: "The cause of so much property being destroyed was the complete disorganization of the once efficient fire department, the yellow fever having carried off nearly all the men, so that the engines were out of order, and the pumps nearly dry.

The yellow fever has swept away the largest portion of our population, and it is impossible to describe the scenes through which we have passed. During the rage of the pestilence all business but that of coffin-making was entirely suspended. On one single square there were thirty victims, among them Messrs. Taylor & Jones, Druggists; Robert Dunn, Moses Baer, Herritage, Oxley & Williams. In another case, out of a mess of twenty-three, only three are now living. Twelve men were appointed to bury the dead, and of these all are dead but four. Among the deaths were Wm. Moore, Colonel Avery and wife, James Bryan and wife, Mrs. Ledan, Mrs. Howard, Mrs. Allen, Mrs. Brookfield, Mrs. Osgood, Henry Jones, and his father, and Alexander Curtis.

Out of the actual residents of Newbern one hundred and twenty-five are dead. The entire number of deaths by the fever was three thousand, of course, by far the largest number being Northerners. Many of the victims were buried at night in rough coffins, and a number of the victims were found dead in their houses. The fever, as an epidemic, is now over, although some few cases occur of persons who doubtless had it in their systems. What, with fever and fire, the once beautiful town of Newbern is but the shadow of her former self.—*Medical and Surgical Reporter.*

Poisoning by Tobacco Leaves.—By Dr. Namias.—Some time ago, M. Decaisne laid before the Academy of Sciences a memoir on "The Intermittence of the Heart and Pulse occasioned by excessive Tobacco-Smoking," in which he arrived at the conclusion that the abuse can produce in certain persons a condition which may be called narcotism of the heart, and which manifests itself by intermittence in the beating of the heart and in the pulsations of the radical artery. The importance of bringing forward facts in connection with this theory induces me to record the following case:—A smuggler some months ago covered the whole of his naked body with tobacco-leaves, with the view to defrauding the revenue of the amount of the duty. The tobacco, moistend by perspiration, produced through the skin a real poisoning, which, however, was cured by means of alcoholic stimulants and laudanum. The extreme feebleness of the pulse, its smallness, the cold sweats, the fainting occasioned by the tobacco applied to the whole surface of the body, present numerous analogies with the condition called by Decaisne narcotism of the heart, and which he noticed to disappear entirely or to diminish when the use of tobacco was suspended or diminished. So far as I know, no other case of poisoning by tobacco applied to the skin has been recorded. The treatment successfully employed does not, however, lead to any general conclusions. In ordinary poisoning, the first thing is to eliminate or neutralize the poison. We must then direct attention to the condition produced by it, and this condition depends not only on the nature and quantity of the poison, but on the previous condition of the individual. We cannot thus treat poisoning by the same poison in different individuals in the same manner, because the same morbific causes do not always produce the same consecutive malady. Electric currents, which in other conditions excite hyperæmia and inflammation, only exhaust and use up directly the vital forces when they act with too great violence. I have made a similar observation as to the effect of alcoholic stimulants, which must be combated according to the different symptoms presented by the patients, that is to say, according to the different diseases which are the consequence of their abuse.—*Edinburgh Medical Journal.*

The Arteria Innominata Successfully Tied.—Dr. A. W. Stewart, of New Orleans, assisted by the eminent Dr. David L. Rogers, has succeeded in performing one of the most astounding feats in surgery, namely the successful ligation of the arteria innominata. The operation was undertaken in July, and the

patient is now well and a monument to the fame of Dr. Mott's prediction, that it could and would be done. Besides tying this artery, the surgeons also ligated the right carotid and the right vertebral arteries to prevent the copious flow of blood arising from its return and pushing power. At one time the wound began to bleed rather profusely, but on plugging it up with *shot*, that evil was overcome.—*Phil. Med. and Surg. Reporter.*

Sudden Death in Contusions and Fractures from Pulmonary Emboli.—The *Med. Times and Gazette* contains an abstract from a paper, by M. Azan, before the Academy of Medicine, wherein the following conclusions were reached:—1. Fractures and contusions may give rise to sudden death through pulmonary embolism. 2. The emboli originate in a thrombosis of the veins of the injured region, itself due to the absorption of effused blood. 3. These thrombosis, or the phlebitis which precede them, are generally latent, and are of more common occurrence than would at first sight be supposed. 4. The explorations by means of the finger of the track of the veins can alone demonstrate their existence. 5. Sudden pulmonary accidents, as dyspnœa, hæmoptysis, precordial pain, syncope, etc., indications of the presence of an embolic coagulum of varying size, may direct the attention of the surgeon to the phlebitis. 6. In venous thrombosis the coagula are more or less adherent, and the plasticity of the blood is proportionate to the solidity of the adhesions. Fractures compelling repose are unfavorable to plasticity. 7. The various movements of the parts, and the application of apparatus, may favor the detachment of the coagula. 8. The surgeon should investigate whether, from the fifteenth day, in cases of fracture and contusion, latent phlebitis does not exist. 9. If this is discovered, rest, antiphlogistics, and an alkaline treatment are indicated.—*Phil. Med. and Surg. Reporter.*

Fibrinous Coagula of the Heart.—At a recent meeting of the London Pathological Society, Dr. Ogle presented a number of specimens illustrating the formation of fibrinous coagula in the cavities of the heart, at a long period before death. Most of these had undergone considerable softening, the centre of some of them consisting of a puriform fluid, bounded by a firm, smoothish surface like the wall of an abscess. Their firmness, color, adherence to the walls of the heart, and changes taking place with them seemed to afford conclusive evidence of their formation having occurred some time before death. As the in-

creased frequency of the heart's action in inflammatory affections prevents the formation of these coagula, it has been suggested that a too liberal use of arterial sedatives may have the effect to favor their formation.—*Phil. Med. and Surg. Rep.*

Surgeon-General of New York.—We observe with much satisfaction that Dr. S. D. Willard, of Albany, has been appointed Surgeon-General of New York on the staff of the newly-elected Governor Fenton. His appointment will be well received by the profession of that State, with whom Dr. Willard is deservedly popular for his unremitting labors to promote the interest and usefulness of their noble State organization—the Medical Society of the State of New York.—*Medical and Surg. Reporter.*

Ligating the Arteria Innominata.—In the Reporter of September 25th, in a communication relating to the successful ligation of the *Arteria Innominata* in New Orleans it was stated that the operation was performed by Dr. A. W. Stewart. This is an error, Dr. David L. Rogers, who was present and aided in the operation, writes us: "the honor of the first successful operation on the *Arteria Innominata* belongs to Dr. A. W. Smyth, Surgeon of the Charity Hospital, New Orleans."

We make the correction with great pleasure.—*Medical and Surgical Reporter.*

Oxygen Gas.—At a recent meeting of the Academy of Sciences, at Munich, Baron Liebig recounted various experiments which proved clearly that oxygen is not only evolved from the atmosphere by plants, but also in tolerably large quantities by decomposition of water in the bodies of flesh-eating animals. He thinks that a knowledge of this fact will throw quite a new light on the processes of nutrition and digestion.

Proportion of Births to Population.—The proportion of births to population in various European countries, is given in a blue-book of "Statistical Tables relating to Foreign Countries." In England and Wales the annual births are 1 in 28 persons; 1 in 30 in Belgium, Holland, and Norway; 1 in 32 in Sweden; 1 in 33 in Hanover, the Hans Towns, and Denmark; 1 in 34 in Greece; 1 in 38 in France; 1 in 26 in Wurtemburg; 1 in 25 in Russia; 1 in 24 in Austria, Saxony, and Prussia; and 1 in 23 in Poland.

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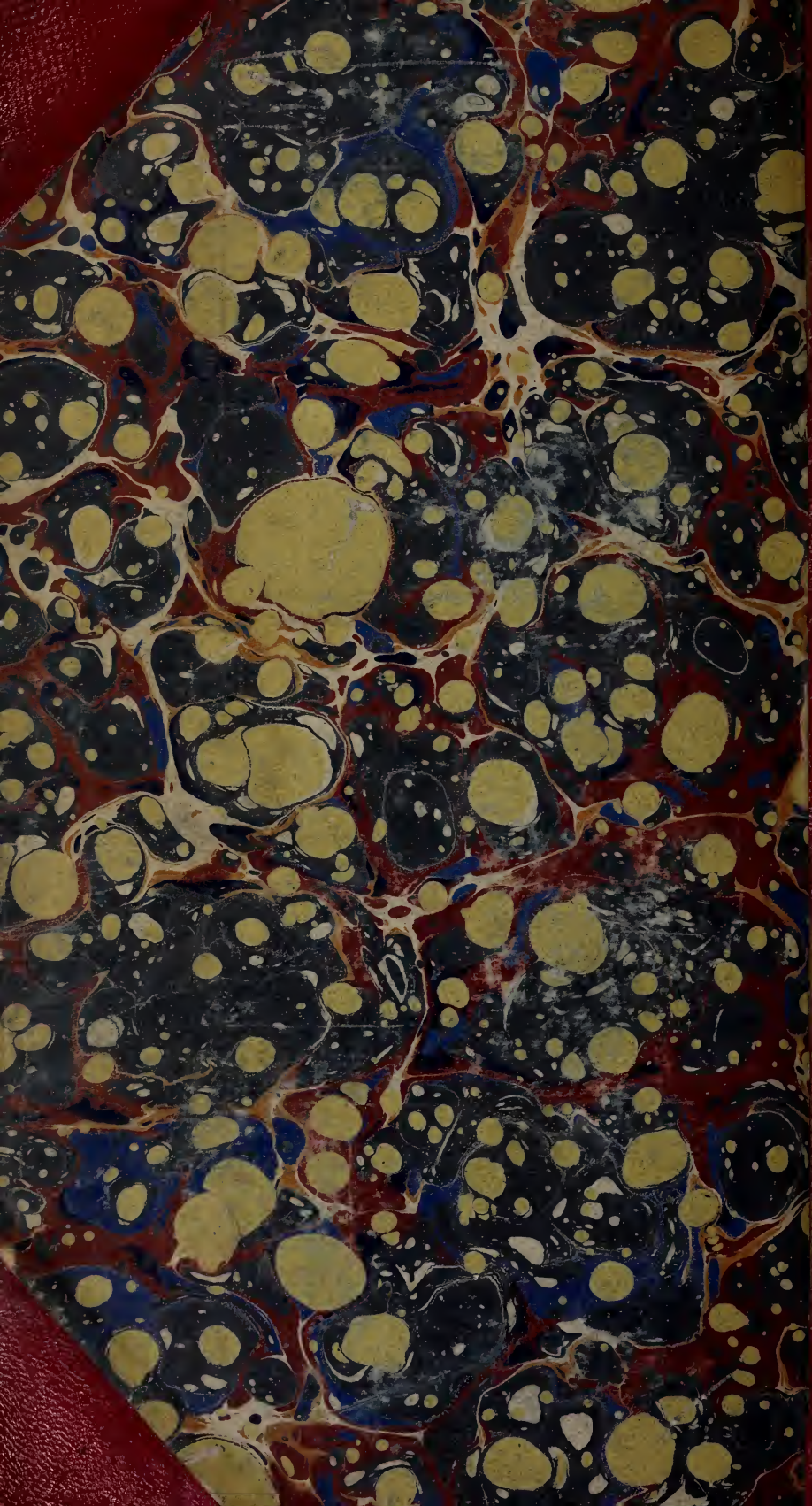
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